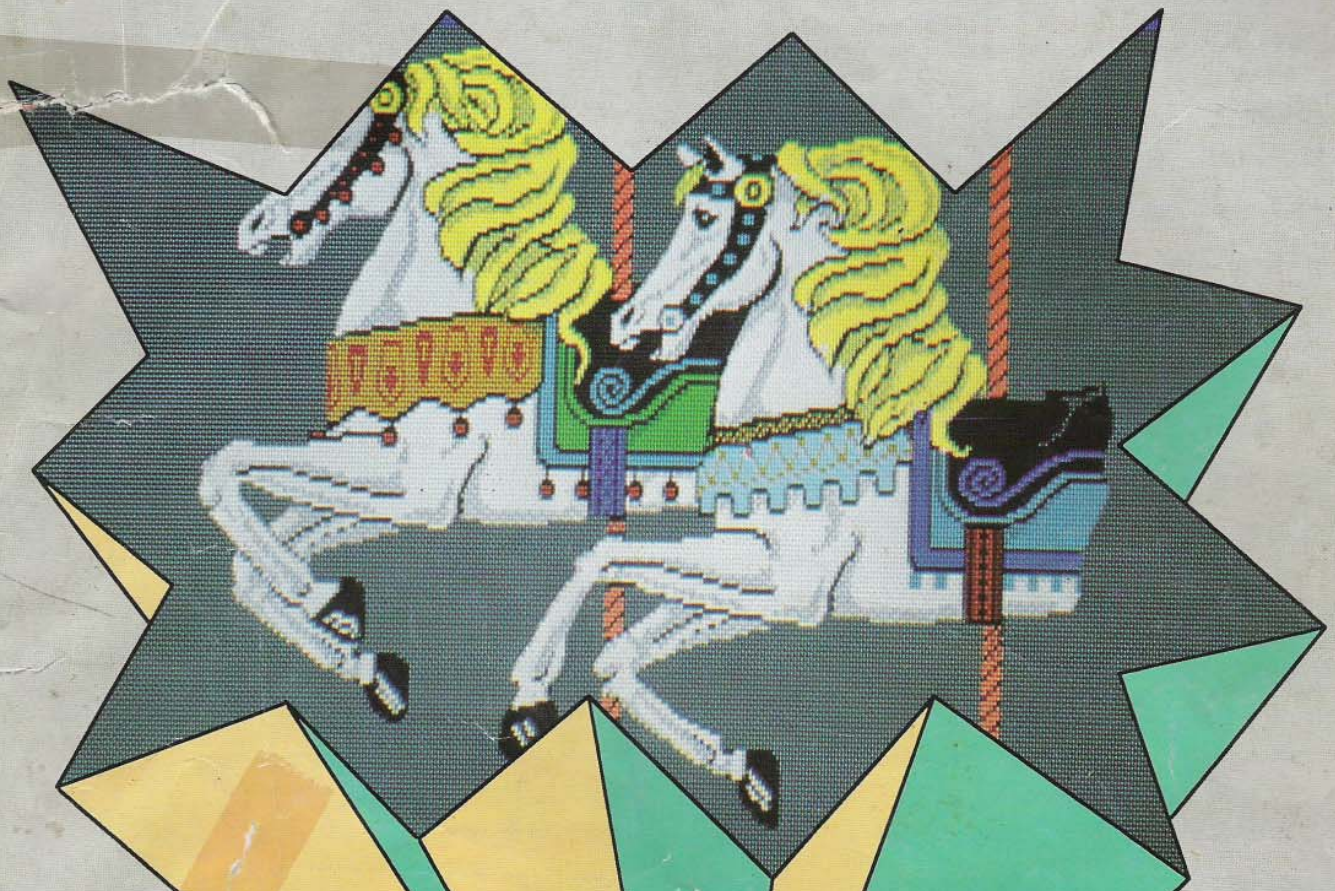
Vol 6 No 6

June $3.50*

The Australian COMMODORE and AMIGA REVIEW

HOXTON PARK $3.50 NEWSAGENCY 607 4179



128 desktop publishing

Win an Elite T-shirt

- Choosing a Printer
- Professional DataRetrieve
- Super Hang-On plus heaps of games
- C 64 program protection

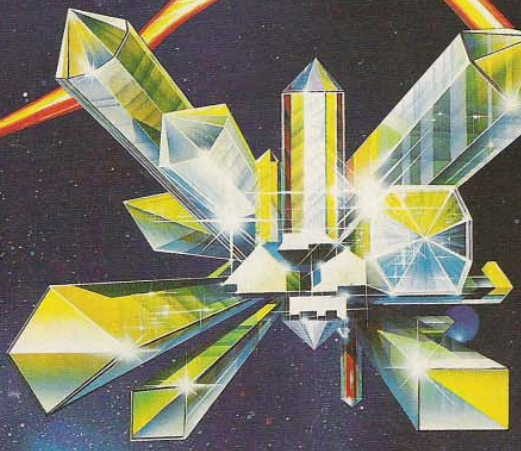
Registered by Australia Post Publication No NBG 6656

*Recommended retail price

ATARI
Turbo Cup
TURBO CUP is an accurate simulation of the Porsche 944 Turbo Cup racing series held in France on four different circuits. Qualifying rounds determine your grid position for each race. There are three m
— Au
Automa
the real thing,
PROFESSIONAL MODE
Capture the excitement of racing a Porsche 944. The squeal of brakes, the aroma of burning rubber, the sweet smell of success, the bitter taste of defeat.
FANTASTIC!!! THE AMIGA VERSION IS AVAILABLE WITH AN ABSOLUTELY SUPERB MODEL PORSCHE WHICH HAS OPENING DOORS, BONNET, MOVING STEERING WHEEL ETC. TURBO CUP is available for the Amiga, Atari, IBM Compatibles (with or without car) and will soon be available for the Commodore 64.
Pactronics
N.S.W.: Pactronics Pty Ltd, 33-35 Alleyne Street, Chatswood. (02) 407 0261
VICTORIA: Pactronics Pty Ltd, 51-55 Johnston Street, Fitzroy. (03) 419 4644
QUEENSLAND: Pactronics Pty Ltd, 12 Stratton St, Newstead. 4006. (07) 854 1982
SOUTH AUSTRALIA: Baringa Pty Ltd, (08) 271 1066 ext. 6132
WESTERN AUSTRALIA: Pactronics, Unit 13, 113 High Rd Willeton 6155. (09) 354 1122
Available from: Microcomputer Spot, Grace Bros, Steve's Communications A.C.T., Harvey Norman, Myer, Westend Computer (Qld, Vic), United Computers (3 stores), Computerscope, and leading computer retailers throughout Australia.

"THE BIGGEST GAME EVER" GAMES MACHINE

the Kristal



"The most impressive looking backgrounds, action areas and character sprites that have been created for home screens." "Hauntingly realistic..."
Amiga User International.

"Animation, authentic sword fights, beautiful digitised speech, an original sound track, the feel of a professional and successful stage production."
ST User.

An epic arcade and adventure game. Strategy, sword fights and space shoot 'em-ups all feature in this unique fantasy of pirates and princesses, a far-away universe and a quest for the mysterious KRISTAL of Konos.
The KRISTAL is the first of its kind...
"An experience once played never forgotten."

"The biggest game ever... exquisite backdrops."
Games Machine.
"An epic game with a style and content not yet matched in breadth of vision and development." "Mind blowing."
PREVIEW C & VG
"Complex game play, stunning graphics, nice sound and sense of humour. What more could you wish for?" Computer Games Week.

GAMES MACHINE

AVAILABLE on AMIGA
Atari and IBM PC coming soon

SCREEN SHOTS FROM ATARI ST & AMIGA VERSIONS.

Contains FREE poster and novella.

YPA Holdings Pty Ltd
5-6 Gladstone Road, Castle Hill, NSW 2154
Phone: (02) 899 2277, Fax (02) 899 2348

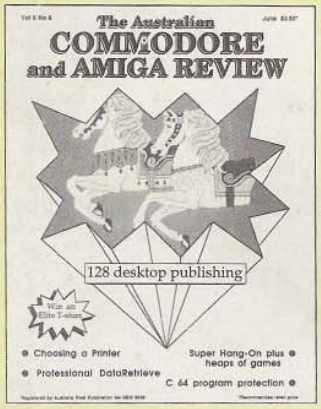
Addictive

The Australian COMMODORE and Amiga Review

VOL. 6 NO. 6 June 1989

Contributors

Mario Annetta
Andrew Baines
Phil Campbell
Oben Candemir
Nathan Cochrane
Damien Disney
Peter Gallen
Michael Hassett
Eric Holroyd
Stuart Kennedy
David Legard
Rod McCallum
Dennis Nicholson
Marco Ostini
Frank Patterson
Ian Preston
Adam Rigby
Adrian Sheedy
Richard Silsby
Lindsay Swadling
Tony Smith
Trevor Smith
Michael Spiteri
Tim Strachan
David Thompson
Harry Waterworth
Graham Winterflood



CONTENTS **PAGE**

Editorial	A new virus attacks our editor	4
News		
C-64ers	C64 and 128 News - Super Snapshot v4 etc	6
Ram Rumbles	Computer shows, games machine	7
Notepad	Amiga News - SimCity, Opticks, Photon Paint II *AMIGA*	8
Letters	MPS 802, Joysticks, PAL to NTSC *AMIGA and C64*	16
Entertainment		
Clicked on Games	Entertainment Roundup, Super Hang-On, Live and Let Die, Incredible Shrinking Sphere, International Team Sports, Helter Skelter, Overlander, Zany Golf, Teenage Queen, Championship Cricket *AMIGA and C64*	18
Adventurer's Realm	Help for puzzled adventurers *AMIGA and C64*	69
Reviews		
128 desktop publishing	80 column desktop publishing with Newsmaker 128 and Spectrum 128 *C128*	46
Better Working Word Publisher	What happened	44
Tasword	C64 word processing *C64*	51
Professional DataRetrieve	This may be the database you've been waiting for *AMIGA*	52
Features		
Picking a Printer	A roundup of printers and some advice on choosing	40
Hints and Tidbits	Latest news and tips *AMIGA*	60
User port connections	Using your C64 to control other electrical devices	50
Programming		
Program protection	Hide your routines from prying eyes *C64*	54
Controlling the C64 cursor	A simple way of setting the row & column required	64
Computer Numbers Pt 2	for the newcomers to computing *C64*	65

Australian Commodore Review
21 Darley Road, Randwick, NSW 2031
Phone: (02) 398 5111
Published by: Saturday Magazine Pty Ltd.
Editor: Andrew Farrell
Advertising: Ken Longshaw
(02) 398 5111 or (02) 817 2509

Production: Brenda Powell
Layout: Tristan Mason
Subscriptions & back issues:
Tristan Mason (02) 398 5111
Distribution: NETWORK
Printed by: Ian Liddell Pty Ltd

The Commodore compatible Floppy Disk Drive That won't Drive you up The WALL!

Now the choice is clear — you can either buy the best Commodore compatible disk drive on the market made professionally by 'Hyundai' one of the world's leading computer, electronic, and car manufacturers. Or you can buy a cheap Taiwanese made drive: or you can buy the latest version of the Commodore disk drive which does not have many of the features listed below and only carries a 3 months warranty. **NOW MAKE YOUR CHOICE!!**

CERAMIC READ/WRITE HEADS
Absolute top quality heads ensure accurate saving and loading.

100% COMMODORE COMPATIBLE
Plugs directly into your C-64, and supports 'daisy chaining' to add further devices to the serial line.

FREE
FREE—FREE
★ KWIK LOAD AND DOS UTILITIES DISK.
★ KWIK PAD — PERSONAL ORGANISER.
★ 8 SUPERB GAMES

TOTAL VALUE OVER $50

NOW!! WITH A NEW ULTRA COMPATIBLE DOS CHIP!!

READ AND WRITE LIGHTS
No more wondering if your drive has 'hung up'.

STEEL HEAD POSITIONING BAND
Unsurpassed accuracy, no more loading trouble due to inaccurately positioned heads.

COMPACT MODERN DESIGN
Colour keyed and styled to complement your C-64

12 MONTHS UNCONDITIONAL GUARANTEE

Pactronics
Best quality, best price and best service — insist on products from Pactronics "the user-friendly company"

N.S.W. Pactronics Pty Ltd. 33-35 Alleyne Street, Chatswood. (02) 407 0261
VICTORIA: Pactronics Pty Ltd. 51-55 Johnston Street, Fitzroy. (03) 419 4644
QUEENSLAND: Pactronics Pty Ltd. 22 Stratton St. Newstead. 4006. (07) 854 1982
SOUTH AUSTRALIA: Baringa Pty Ltd. (08) 271 1066 ext. 6132
WESTERN AUSTRALIA: Pactronics W.A. Unit 13, (Rear) 113 High Road, Willetton 6155. (09) 354 1122

Available from your local retailer or call one of our offices.

WHAT'S NEW
WHAT'S NEW
WHAT'S NEW
from Computamart

. . . A micro switch 3 button mouse all ready for DOS 1.4 at only $79.95 . . .
MY-T-MOUSE

. . . A full PAL colour Framegrabber with built in Genlock. Heaps of features, easy to use and great results. Only $1699.00 . . .
SUPERPIC

. . . An IBM hard disk adaptor with auto boot by Spirit Technology for Amiga 500 and 100 with or without power supply and casing. A complete 42MB unit all ready to run only $1499.00 . . .
ST-506 HARD DRIVE ADAPTOR

. . . the best database and spreadsheet with on-line user support and full upgrade path to professional level . . .
SUPERBASE and SUPERPLAN

PLUS the latest software you've been waiting for. Available from your local dealer or contact

Computamart

Computamart Pty. Ltd., 622 Newcastle Street, Leederville, W. Australia 6007
Telephone (09) 328 9799, Fax (09) 227 7324, BBS (09) 328 4217
Bringing the world of Amiga to you fast!

Editorial

What does the editor do? I spend the best part of the month collecting news, bits of information, articles, chasing new products and the like. I stash them all on my Amiga hard drive and prepare to pull everything together at the last possible moment in order to produce an up to date magazine - with many thanks to all our contributors.

Now what happens when the office hard drive decides to dismount and head north for the winter? A mad desperate rush at reconstructing one 10 Megabyte partition and salvaging as many files as possible in the process. It wasn't until I had to put everything back that I realised how much was on there. One nine hour session until three in the morning and a number of hours the next day - finally the show was back on the road. However, something nasty is lurking in my system.

During my recovery attempt, my Workbench disk was unexpectedly QUICK formatted with the disk name PHOENIX. Another Lazarus, or the calling card of some new Virus? The hard drive, it turned out, was covered with over thirty different read errors, all well spaced apart. Tim Strachan shared my suspicions of foul play - a disk with samples of the suspect operating system will be forwarded to the relevant virus inspector type people such as The Alliance and Nick Wilson of NoVirus fame.

I've been caught by Virus strains before - SCA wrecked a few games disks, Byte Bandit hindered progress on Amiga-Live! But this one takes the cake. What is it that possesses the creators of such demented programming to construct these alarmingly destructive routines?

It would appear what I have is an IRQ type virus or one which attaches itself to the startup-sequence. It could also be a time-bomb disguised in one of the PD programs I recently downloaded. Or did it come on board via one of the many new games which run through my system?

The mind boggles. There are many new Virus strains now - over twenty, maybe even thirty. For protection from known varieties be sure to have a good anti-virus program in your utility collection. The Alliance has released a new disk of detectors and protectors which is available from our editorial offices - 02-817 0011. Megadisc also have a good Anti-Virus Pack.

Don't waste your money on the bells and whistles $60 commercial versions - they are no better. In fact, in many cases they are worse than what are available as public domain/shareware programs.

Andrew Farrell

AS AUSTRALIAN AS OUR KOALA

Koala Courtesy Lone Pine Sanctuary

Assist the Koala Foundation: During June, July & August, for every Starcursor Joystick sold in Australia, $1.00 will be donated to the **Australian Koala Foundation.**

What the computer magazines say:
"King of the league" — Commodore Amiga Review, Dec. '88.
"Stands up to a battering" — Amstrad User, Feb. '89.
"I have tested this stick extensively, and can thoroughly applaud the solid yet functional design" — Sydney Morning Herald, Jan. 20 '89.
"Aussie stick comes up trumps" — New Computer Express, U.K.

Dealer enquiries to:
Multicoin Amusements Pty. Ltd.
17 Wrights Place
Labrador, Gold Coast, Australia, 4215
Ph: (075) 37 5711 Fax: (075) 37 3743
W.A.
J. Mills Agencies
Ph: (09) 344 1660 Fax: (09) 345 1308

AUSTRALIAN MADE

The Australian
COMMODORE
and AMIGA REVIEW

Make sure of getting your copy Subscribe now!

Please enrol me for ..... issues subscription to The Australian Commodore and Amiga Review, commencing with the ..... issue.
I enclose a cheque/money order for $ ....
Please charge my Bankcard
Bankcard number: .....
.....
Expiry date: .....
Name:.....
Address:.....
.....Postcode: .....

Please tick applicable box
First Subscription ☐
Renewal ☐

TO: The Australian Commodore and Amiga Review 21 Darley Road, Randwick NSW 2031 (02) 398 5111

Rates within Australia:
6 issues $19.00 (inc postage)
12 issues $36.00 (inc postage)
Minimum OS postage $35.00 AUS (Air Mail) more for some countries

If you don't want to cut this out photocopy it or just send a letter.

C64ers...

Poster Maker 128

Free Spirit Software has released *Poster Maker 128*, for the C 128 in 128 mode. (It's a bit like *Photolab* on the Amiga.)

The package allows the user to create large posters ranging in size from 2 x 2 to 5 x 5 (25 pages). The posters may be printed out or saved to disk as "Picture" files. *Poster Maker 128* includes a graphic utility which permits it to import Basic, *Sketchpad 128* or *Spectrum 128* graphic files.

These graphic files can also be enlarged on both the x/y axis. Also included is a utility to reduce the size of graphic screens to create clip art.

Poster Maker 128 operates on the 128D or the 128 with 64K Video RAM Upgrade in 128 mode with 80 column display. Resolution is 640 x 200 pixel. A 1351 or compatible mouse and a 1571 disk drive are required. Optional support is provided for a 1571 or 1581 disk drive as a second drive. A local distributor of Free Spirit products is about to be announced - US price is around $29.95.

Family Roots

The Victorian Genealogists using Microcomputers were interested to see a copy of the recent article "Family Roots C64 and 128" which was published in this magazine. For the past four years Victorian GUM has been the Australian distributor for genealogy computer programs from Quinsept Inc, including *Family Roots*, which is available for a wide range of computers including the Commodore 64 and 128.

During recent years, Victorian GUM have sold over a hundred *Family Roots* programs for all types of computers and their customers seem very happy with the program. From their experience the program is bug free.

Following the publication of our article, many queries were sent directly to Quinsept Inc in the USA. These queries have been redirected back to Victorian GUM and they have endeavoured to reply to them all. Members of the group aim to help each other, and over the years have built up a great field of expertise, so that they are able to offer puchasers of *Family Roots* the best of advice and after sales service.

The 128 version of *Family Roots* is now available, but nothing has been heard as yet of an Amiga version. However, an Australian developed program for the Amiga is being produced at present and should be released soon.

Quinspet have also recently released *Lineages*, three lower priced genealogical packages for the Commodore: Starter, Standard and Advanced. As yet these programs have not been seen in action we are unable to comment on them. However, from the details supplied to Victorian GUM from Quinsept each program has certain limitations.

For further details about *Family Roots* or *Lineages* write to Victorian GUM, C/o Genealogical Society of Victoria, 5th Floor, 252 Swanston Street, Melbourne Vic 3000.

Super Snapshot

Software Support International is shipping version four of their excellent Super Snapshot cartridge. For $64.95 U.S. (ask Westend Computers (03) 350 5144 about local availability) this little wonder gives you every C64 utility you can think of in one small box. There's an M/L monitor, screen snapshooter (to disk or printer, and it will even print sprites), DOS wedge and turbo DOS, function keys, fast disk and file copier, sprite killer and re-enabler, a brand new sprite monitor, BASIC extensions, track and sector editor, and memory snapshot backup utility (plus over 100 parameters on disk).

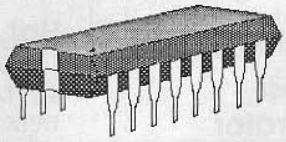
This cartridge just keeps getting better with every release. There's nothing else that can even touch it.

If you own any previous incarnation of Super Snapshot, you can upgrade for $20 US, and that's quite a deal. C128 owners, be sure to add $8 US and get the disable switch to save wear and tear on your cartridge port.

Kermit V2.2

Kermit V2.2 is a updated version of the popular telecommunications package for the C64/128. This one has all the features of 2.1, but adds support in 128 80 column mode only for 2400 baud. No price for the update was available at press time, but you can get more information by contacting Dr. Evil Laboratories at P.O. Box 190, St Paul, IN 47272. ❑

RAM Rumbles



Computer shows

Planning on travelling to the United States in the near future? Here's a list of computers shows worth visiting. Register in advance if you wish to attend seminars.

Show	City	Dates
Ami Expo/MidW	Chicago	July 28-30
Ami Expo/Europe	Frankfurt	Sept 15-17
WOC/Philly	Philadelphia	Sept 21-24
Ami Expo/CA	Santa Clara	Oct 20-22
Comdex/Fall	Las Vegas	Nov 13-17
WOC/Toronto	Toronto	Nov 30-Dec 3
CES/Winter	LasVegas	Jan 6-9,1990

For registration information call: WOC - World of Commodore: Hunter Group Toronto Ont 416 595 5906. AMIEXPO: AMIEXPO New York NY 800 32. AMIGA COMDEX: Interface Group Needham MA 617 449 6600. CES: CES Washington DC 202 457 8700. DEVCON: Commodore West Chester PA 215 431 9100.

New Commodore games machines

Two prototype dedicated game machines are alleged to be taking shape in Commodore's R & D labs. Of course, that doesn't mean they'll ever see the light of day. So, for your imagination only, here's what's cooking:

The first is an 8-bit game machine based roughly on C64 technology. It will not run C64 software, and the cartridge port is totally different.

The CPU is said to be an 8-10 MHz 6502; the video chip's an advanced VIC-III chip with an added 80-column mode. It will address a meg of RAM, though it will probably initially have only 256K-512K.

For a games machines, it has some very powerful features. Someone is having someone else on. Try a full keyboard; optional disk drive (neither C64 or Amiga compatible); built-in serial and parallel ports; RGBA video output but no composite or RF video; and a price tag of over $300 U.S.? Some sources are speculating that the chip design guys at Commodore are just trying to justify their existence with this one.

The second game machine seems more probable - it will be a stripped down Amiga 500 with a cartridge port. Entry level will probably be configured with 512K RAM, though 256K is also in the air. The cartridge port will likely be "credit card" size. There is speculation that keyboard and disk drive connectors would be installed so that gamers could upgrade to full computer status - for a price. No one we talked to would speculate on retail price, but we hear software developers are balking at the thought of having to produce versions of their disk games in the costlier cartridge format.

Not surprising considering the fact many programs have to end up in at least four formats now - IBM, Macintosh, Amiga and Atari! ❑

Update

I cannot tell you how nice it is to be back. I seem to have done nothing but look out of plane windows and wait for my luggage to come off the carousel (mine always comes off last for some reason). However, it has certainly been worth while because I have signed agreements with some companies for a lot of terrific new products. So many, in fact, that I really don't know where to start, but just to whet your appetites:

- A cordless mouse for the C64.
- A different and, in our opinion, better DOS chip for our disk drive.
- GARFIELD - great fun - for the C64, Amiga and PC.
- A range of budget software - really good games at really good prices.
- Umpteen other games and products for you which I will elaborate on in my up-date newsletters which are of course sent direct to your home.

While I was away I arranged for the delivery of some new books and a new product called TOOL BOX for the Amiga. The books are for the PC and are such things as MICROSOFT WORKS FOR BEGINNERS etc. We have some great new games for the Amiga in stock now incuding RINGSIDE, 20,000 LEAGUES, and EMANUELLE. Also for the Amiga we have an External Drive Switch. Many Amiga programs will not run if a second drive is connected. This device allows you to switch your external drive off, thus reclaiming 30k of memory.

All of you loyal Amiga up-date members, whoever sends in a stamped addressed envelope this month will receive a free COMPUTER VIRUS POCKET BOOK!

For all you Commodore Family Pack owners who have not yet upgraded to disks or tapes we now have a dozen educational cartridges, for children aged 4-12 years.

GTBB

ADVERTISEMENT

Notepad

News from the USA

by Peter Ward

Brown Wagh Publishing are soon to release Pen Pal, which I'd describe as a word processing, desktop publishing, database and limited graphics package. "Productivity" is the theme with this program, as Brown Wagh have essentially created a package which is aimed squarely at the business user. Some features include the remarkable ability to print NLQ printer fonts and graphics on the same printer pass. A 100,000 word spelling checker and writing style analyzer are included. Text can be flowed around graphics or any user defined boundary while typing. Graphic tools, such as structured boxes, lines, borders, shadows and backgrounds are included, which allow form creation, where various fields can be filled in or edited. This process is continued further by the addition of up to four databases which include mail merge and copy functions.

Multiple graphics (any IFF image including HAM) can be imported, resized and cropped and placed in the page in the original resolution. Support is given to 200 fonts both black and white and colour. Up to four documents can be opened at any one time along with ability to create report templates and import fields from databases.

MAC-Emulator

Orders are now being taken for the Macintosh emulator, now officially labeled A-MAX by Readysoft. As previously mentioned in the April issue, A-MAX has a RRP of $US199.95. The emulator is compatible with all Amiga models and plugs into the external disk drive port.

Connectors are fitted to A-MAX and allow external Amiga and Apple drives to be connected. There is a catch however, as you must also obtain either Macintosh 64K or 128K ROMs from a third party, and to allow full Macintosh compatibility an Apple 800K external drive is required. Limited emulation is available however, using the standard Amiga external drives.

On the positive side, 68020 support is available if you obtain 128K ROMs, and programs such as *HyperCard, Multifinder, Microsoft Excel* and *MacTerminal* can be run with commensurate ease. ReadySoft may be contacted at 30 Wertheim Crt. Unit 2. Richmond Hill, Ont. Canada. L4B 1B9. Tel (416) 7314715.

DPIII upgrades - US customers

I contacted Electronic Arts in California regarding *Deluxe Paint III* upgrades for current *Dpaint I* or *II* users. Send $US63.00 plus the original program cover (this covers both upgrade and postage to Australia) to Electronic Arts , *Deluxe Paint III* Upgrades, P.O. Box 7530. San Mateo, CA. 94403, USA. Label the envelope "Attention Gino", who promises me that us Aussie users will get prompt dispatching of their order if addressed to him.

Low cost accelerator

For those of us interested in Ray Tracing, Animation or any CPU intensive task an affordable accelerator board that really works has been released by CSA. Called the MIDGET RACER, the device is a 12Mhz 68020 daughter board that also can support either a 68881 or 68882 Co-processor.

Even without the math co-processor, this board will speed up renderings by a factor of two and is reasonably priced at around $US350.00. Yet another manufacturer, GVP, has also announced an accelerator card using a 68030 Chip running at 20Mhz! no details yet however on pricing or release date.

New ray-trace software

Incognito Software have released a new ray tracing program, which also supports Haitex's 3D glasses. Called Opticks, the program presents the user with the al la *Sculpt Animate 3D* tri-view, and comes with a set of 40 geometrical solids to help speed the creative process.

Surface texture can be varied from matte to mirror, as well as control over light sources, such as spot, sun and flood. RRP is $US179.95.

New Tek have announced *Digi Paint 3.0* which will add to the superb field of paint programs now available in *Photon Paint 2.0* and *DPaint III*, hot keys, 3D texture maps and Superbitmaps are now included in this latest version, though no price and release date was available to me in mid April.

Hot new games

Some notable new games are *Lords of the Rising Sun* from Cinemaware, *Hostage Rescue Mission* and *Thunder Blade* by Mindscape and *Prison* by Actionware.

On a more educational level, Centaur Software have released *Mypaint*, a paint program for children. *Mypaint* features a brightly coloured palette, animated icons and various "hidden pictures" to add to the appeal this program would have to children. RRP $US49.95.

Centaur have also released (for some months now) B.A.D. a disk optimization program, which can decrease floppy and hard disk access times by up to a factor of five. The program does not use RAM per se, and actually restructures disks to increase access speed. $US49.95 RRP.

Magellan upgrade

Emerald Intelligence is now upgrading to version 1.1 of Magellan with details on how to obtain the upgrade being sent to registered users. The upgrade will cost US$30.00 after April 30th and includes additional knowledge bases, display window scroll bars, inclusion of trigonometric functions, improved file requestors and the 68020/68881 support along with the ability to designate text or numeric types in the rule building process. An Interface Toolkit has also been added to their product line, which will allow the user to interface with *Superbase files*, import data from *Lotus 1-2-3* files and ASCII text files along with the ability to interface with the serial port and hence modems, the

package giving a vast increase in the flexibility of expert systems developed on the Amiga with Magellan. RRP is $US45.00 to registered users. - Peter Ward

More on Pen Pal

Developed by SoftWood Company, *Pen Pal* combines word processing, database management, forms generation, structured drawing, and high-quality printing.

"*Pen Pal* is a third generation Amiga word processor," said Dick Brown, president of Brown-Wagh Publishing. "The first generation (*Textcraft*; *Scribble!*, *Prowrite*) satisfied the basic needs of software-starved Amiga owners. 'The second generation(*WordPerfect*; *Excellence!*) raced to see who could add the most features. However, they all forgot some of the basic things like print quality, speed, user interface, and all-around usefulness."

Pen Pal is designed to satisfy most of the people most of the time - for people who need good quality print - for people who keep lists of things, like names, addresses, phone numbers and birthdays - or who use forms, like business letters, telephone messages, to-do lists and contracts - or who want to get the most from their Amigas, specifically colour.

Pen Pal focuses on all these things, and pays special attention to the user interface. Details like the "smart" mouse pointer (identifies screen gadgets in realtime), the status display (shows memory and disk usage as well as document requirements - so you won't ever get stuck), and the file requester (recognizes devices in realtime, does name search for files, and

AMIGA PRODUCTS

Hard disk drives ready to use from $890.

Star NX1000 colour/mono printer, Star NX2410 printer. From $480 includes cable.

Starcursor joysticks $49.95.

All Pactronics and ECP products available. New Abacus Amiga manuals in stock.

Quality Computer and printer accessories.

Latest Amiga Magazines, Australian Commodore and Amiga Review other publications and software available.

Bi-monthly Amiga workshops.

Tuition classes for beginners - bookings essential.

WHITE'S COMPUTERS

(02) 634 6636

37 Daphne Ave. Castle Hill 2154.

Bankcard/Mastercard/Visa Welcome

CLEAN UP YOUR AMIGA !

At last! An integrated monitor stand to give your Amiga 500 a more professional look. It attaches to the rear deck of the A500, the monitor sits on top and your cables and power supply are concealed beneath it.

- allows easy access to cables
- strong, scratch resistant acrylic
- maintains efficient cooling
- reduces overall footprint
- attractive grey tint colour
- raises monitor to proper eye level

Only from *ADVENT SOLUTIONS*

32 Gertrude St, Ingleburn NSW 2565.

Phone (02) 605 9938

I enclose my cheque/money order for $39.95 OR
Please debit my BANKCARD/MASTERCARD
No..... Exp date.....
Name:.....
Address:.....
..... PostCode:.....

OR

TELEPHONE NOW AND TELL US YOUR BANKCARD OR MASTERCARD NUMBER FOR IMMEDIATE DELIVERY

COMPUTERMATE™

WE'VE GOT THE MOVERS

Australia's Largest Range of Productivity SOFTWARE & ACCESSORIES FOR

commodore 64/128

AMIGA

Plus the COMPLETE RANGE OF

star PRINTERS

We also distribute a full range of paper, ribbons, blank disks, joysticks, covers, printer stands, disk boxes, cables and air freighted copies of overseas magazines.

PH: 02-457-8118 FAX: 02-457-8739

Notepad

even sorts filed by name, size or date), show the thought put into the design.

Some highlights include editing with undo's and redo's, spell checking, writing analysis, fonts sorted by name and size, and the very special full-page view during editing and scrolling.

Since most word processors include mailmerge capability, *Pen Pal* included a built-in database. *Pen Pal's* database is easy to create and manipulate. It prints mailing labels (up to 8 across) and detailed reports with columns, titles, sort breaks and subtotals. Records can be copied and pasted into any *Pen Pal* document.

Unique line and box drawing capabilities provides the capability to add colourful backgrounds, boxes around titles, thick underlines, and shadows. This drawing capability leads to the next breakthrough - forms generation, ie. order sheets, to-do lists, telephone messages, invoices, etc. To carry it further, *Pen Pal* helps fill in the form by stepping form field to field, automatically.

Pen Pal handles any clip art, brush or even HAM image. Images can be resized or cropped without losing the original resolution. *Pen Pal* will flow text to the left, right, or over any picture, on a box boundary or contoured to fit the actual image - all automatically, even while typing

Pen Pal actually prints multiple pictures on the same page, with retaining their original 4,096 colours, palette and resolution

Pen Pal can use any graphic fonts available on the Amiga to print text. However, *Pen Pal* is the first and only Amiga word processor capable of printing graphics with true NLQ printer fonts (native not graphic fonts) on the same page in the same pass for quality and speed.

Pen Pal requires 1 Meg RAM and 1 disk drive with an Amiga 500, 1000, 2000 or 2500. All printing is done using Preference printer drivers. The suggested list price is (US)$149.95 - Full review soon.

Project management

Brown-Wagh have introduced *Project Master*, the first professional project management system on the Amiga. For businesses such as contractors, programmers, product managers and manufacturers, *Project Master* can help manage and control seemingly complex projects.

Developed by Technical Resource Systems Laboratory (New Orleans, LA), *Project Master* provides the tools to plan, track and control a specific project. It presents a graphic overview of the project and points out tasks which may jeopardize its successful completion due to time, resource or cost requirements.

Ease, speed and flexibility were of primary importance in the design. *Project Master* consists of six independent, multi-tasked modules. Plan helps you represent tasks on the screen for a visual overview.

Input helps you enter planned or actual project data such as time, resource and costs requirements. Statistics calculates the critical paths, slack time and project resource allocation. Resources, Costs, and Time generate GANTT and PERT charts showing resource allocation, revenue expenditures and task schedules.

Some unique features of *Project Master* include: Charts saved in IFF and *DrawPlus* format to interface with DTP or CAD products, Input and statistics saved in ASCII for word processor interface, fully multitasking for easy "What if" analyses, onscreen toolbox for convenient graphic manipulation, statistical variance and standard deviation computed on best, worst and typical time estimates, and automatic re-adjusting of start/end dates.

The manual is accompanied by a tutorial with sample data. The software is supplied on one 3 1/2" disk.

Project Master operates on an Amiga computer with 512K bytes of memory and one 800kb disk drive. RRP (U.S.)$195.00.

For more information please call Brown-Wagh Publishing at 408-395-3838 in the USA.

Designer Database

Software Visions have introduced their Designer Database series for the Amiga. This is a collection of many useful databases and macros, organized in a ready-to-use format. These off-the-shelf applications are designed to work with Software Visions' *Microfiche Filer* and *Microfiche Filer Plus* database engines.

The first two disks in the Designer Database series, to be released on March 31, are the *Home I* and *Business I* disks. *The Home I* disk includes such classic applications as videotape, audio recording, stamp, and recipe catalogues, a home budget, a personal inventory, and more. The *Business I* disk includes a daily calendar, mail merge (with macros), expense report, general ledger, a sophisticated invoicing/inventory application with macros for inventory processing, and more.

These Designer Databases are affordably priced at (U.S.)$39 for *Home I* and (US)$59 for *Business I*. Soon to follow will be Video/Graphics and *Sound I*, *Home II*, and *Business II*.

For more information, contact Software Visions at P.O. Box 3319, Framingham, MA 01701. 800-527-7014 or 508-875-1238.

SimCity

Maxis Software has announced the release of *SimCity, The City Simulator*. When you enter SimCity, you take on the role of Mayor and City Planner of a sophisticated simulated city. You zone land, balance budgets, instal utilities, manipulate economic markets, control crime, traffic and pollution, and overcome natural disasters. You control the fate of the city. Design, plan and grow your own utopian dream city from the ground up, or take over any of eight included pre-built cities on the verge of disaster. Scenarios include: San Francisco, CA 1906, just before the great quake; Tokyo, Japan 1957, just before a monster attack; and Boston, MA 2010, just before a nuclear meltdown. Watch the disaster occur, gather your funds and information and bring the city back to life.

The city is alive: you see traffic on the roads, trains on the rails, planes in the air, even football games in the stadium. You see population levels rise and fall, residential areas develop from single family homes to condos to slums. Watch commercial and industrial areas grow or de-

Who is smart enough to offer you all this for $2995?*

Wrong. It's Commodore.

And that really shouldn't surprise you.

Our well-deserved position in Australia as supplier of the largest selling small business computer continues with this very smart offer.**

A complete business system plus software for a neat $2995.

Comprising the PC10III with 20Mb hard disc, colour monitor, 15" wide carriage printer and the Supercalc 4 spreadsheet programme to get you straight down to business.

And, of course, this versatile business system is IBM† compatible.

See your nearest Commodore dealer for more information on this smart business package and our entire PC range.

commodore

SMARTER.

SEE YOUR NEAREST COMMODORE DEALER FOR MORE INFORMATION.

*Prices as at 7.5.89. † IBM is a trademark of International Business Machines. ** Source: COMPASS RESEARCH Micro StoreBoard.

USA COM 0342

cline depending on your skill as a strategic city planner. While YOU do the planning and zoning, it is the Simulated Citizens, a.k.a. Sims, who move in and actually build the city. Sims live, work, play, move, drive, and complain about taxes, traffic, taxes, crime and taxes - just like humans. The game is primarily a constructive program, but those who can't enjoy a game without destruction can wipe out a city through terrorism, financial mismanagement, or by evoking a natural disaster such as an earthquake or monster attack.

SimCity supports various printers for generating poster sized printouts of your city, and comes with extensive documentation including a User Reference, an explanation of the inner workings of the simulation, and an essay on the History of Cities and City Planning.

Listen here

Aegis sent along a copy of *Audiomaster II*, their stereo sound digitizing software. (You'll need to provide your own hardware sampler - there are several on the market.)

The software can be used to fine tune your sample, add digital effects to it, edit it, and generally muck about with it. One very nice feature is an automatic loop-seek function that will help find points for looping the sample for instrument creation.

McDisk

If, for some peculiar reason, you want to transfer files from a Mac to an Amiga it's now possible. Central Coast Software is coming out with MAC-2- DOS.

Actually, there are several reasons you might want to do so: outputting PostScript files and transferring Mac graphics spring to mind. An external Mac drive is required and the package comes with an adapter cable.

Tentative prices are $295 U.S. with a Mac drive, $89.95 U.S. without the drive. Contact the company for final pricing. Also available from Central Coast Software is *Quarterback Tools* ($79.95 U.S.), which is a collection of utilities designed to make life with a hard drive a little easier. 424 Vista Avenue, Golden CO 80401, 303 526 1030.

Little scan

The ScanLab/100 is a hand held unit that will scan an area about 4" by 6" at a resolution of 200 DPI for use in desktop video, publishing or whatever! The scanner itself is Sharp's model JX-100. (The special cable and software from ASDG are specific to the JX-100, which means you won't be able to plug a bigger scanner into it if you should want to upgrade in the future.) The price for the JX-100 is $995 U.S, and the cost for the cable and software has yet to be announced.

Card stuff

If you've been envious of A2000 owners' ability to plug cards into their machines, and you have an A1000 or A500, envy no more. Phoenix Electronics have produced an expansion chassis for each machine.

Each one will accept all the usual A2000 cards (including the 2088 PC emulator and the 2090 hard drive controller as well as all the DA hard cards and SCSI controllers). There are two models of the A500 and A1000 boxes, one with a power supply ($253.95 U.S.) and one without ($179.95 U.S.).

The chassis are side-mounted and have pass-thrus. Phoenix is also producing two more models, these with co-processor slots. No price has been set yet.

Badge Winners

It's Killer Demos like those generated by this contest which help to sell new Amigas, and that benefits us all. Thanks to the Bay Area Amiga Developers Group for all their work in organizing this competition.

Judged Best Overall (and winning a brand new Amiga 2000, courtesy of Commodore) was Brad Schenck for his Director animation Charon. Other winners were: Best Custom Demo - Tank by Vince Lee; Funniest - Not Boring Again by Dr. Gandalf; Best Sound - Charon by Brad Schenck; Best Graphics - Tychoid by John M. Olsen. - Watch for these demos on FISH disks soon.

How to beat Dragon's Lair

We promised you this one - now here it is! To see how to finish the game successfully, press ESC R/L N 7 simultaneously (the screen should flash), then press the fire button. Do this just as the screen showing the credit finishes loading. The demo will start and show you the game to its conclusion.

Apple dismantles Video / Presentation Department

We understand that Apple dismantled its hastily assembled Video and Presentation Department, which was organized to promote the Mac II as a desktop video machine. Insiders say that the Amiga is already too firmly entrenched for Apple to even want to try to shake it loose.

WordPerfect user group Melbourne

Organizers of Australia's first WordPerfect user group are predicting enormous success for the organization, following its first meeting recently in Melbourne.

They are expecting membership numbers to rise rapidly in the next 12 months. The Melbourne WordPerfect group is a nonprofit independent organization designed to be a forum for support, problem solving and education of users. Anyone interested in joining the Melbourne group, or securing further information, should contact Jodie Maunder at Practical Software (03) 267 4844.

Disk alignment system

Free Spirit Software has released Ami.. Alignment System, a precision drive evaluation and head alignment system for the Amiga series of computers. It evaluates the mechanical condition of internal and external 3.5" disk drives and provides information to the user for correction of nonstandard conditions.

From a control panel menu, the user may select options to automatically test drive alignment, test drive speed, test drive read write performance or manually test and adjust drive alignment. Drives DF0: through DF3: may be evaluated. Test results are displayed in the control panel windows and may also be output to the printer. The control panel is operated by means of 'point and click' selection. On screen help is available while the program is running by pressing the Help key. The Ami.. Alignment System includes a program disk, a specially prepared calibration disk and an operation manual.

The operations manual includes instructions and diagrams for drive disassembly and adjustment. Commodore and third party disk drives are covered in the manual.

Using the Ami.. Alignment System, the Amiga owner can determine if spurious drive errors and corrupt disk requesters are the fault of marginal media or a mechanical problem. If the problem is mechanical, advice is given to the user on its correction. The Ami.. Alignment System is published by Free Spirit Software at a suggested retail price of $49.95 US.

Adaptor cable for CGA on Amiga

Clear Technology, national distributors of Philips monitors, has released an adaptor cable which allows a Philips CM8833 CGA monitor to be used with Commodore Amiga personal computers. The adaptor allows Commodore users to replace the Amiga 1084 monophonic monitor with the Philips RGB and CVBS colour stereo monitor, which provides a 14" screen and 600 x 285 resolution.

All Philips monitors come with a two year warranty, delivered through Phillips service centres Australia wide. The monitors are European designed, and have power supplies suited to Australian conditions, unlike many Taiwanese manufactured products. The adaptor cable can be purchased for $30.00, and is available im-

Computermate™ (australia)

Amiga and Commodore 64/128

NERD SEARCH

Do you sit in front of your computer all day and night playing games or do you also write programmes?

Is your computer your best friend?

Have you produced something that you are particularly proud of?

If you have a work of art you would like to market internationally, we are always looking for serious and interesting talent.

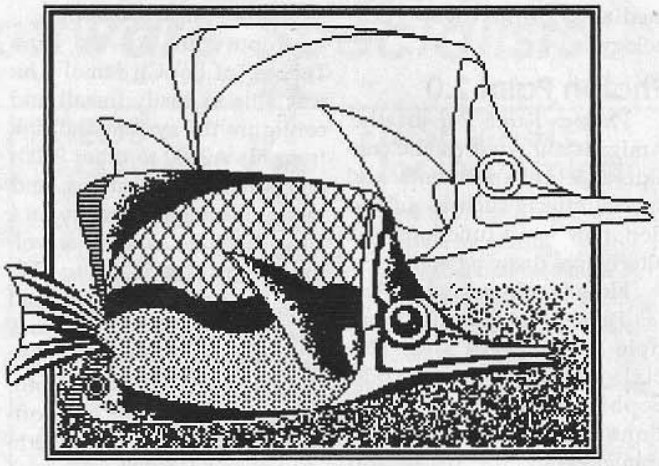
If you are serious, then so are we. For us to consider a submission, it should be a completed program or near to a finished program as possible. Please send a disk and support materials for our evaluators to get through the software quickly. Evaluation takes approximately 6 to 8 weeks.

Address your submission to:

Mr. Ray Firth
Computermate Australia Pty. Ltd.
P.O. Box C64,
Mt. Kuring-gai, N.S.W. 2080.

NEW FROM ARTSCAPE

FOR THE AMIGA



THE AUSTRALIAN ANIMALS COMPUTER COLOURING BOOK

THIS DISK FEATURES AN A TO Z OF AUSTRALIAN ANIMALS, A LIBRARY OF OBJECTS AND TEXTURES PLUS A TUTORIAL

OPTICAL DREAMS, THE ULTIMATE OP ART CONSTRUCTION SET AND ART DISK

BEST RESULTS WILL BE GAINED FROM THESE PRODUCTS IF THEY ARE USED WITH A PAINT PROGRAM

HOTDISK 3

THE FAMOUS AUSTRALIAN ADULT DISK MAGAZINE.

Please rush me the following products:

AUSTRALIAN ANIMALS.....$25
OPTICAL DREAMS.....$25
HOTDISK 2,3 Single issue.....$20. No: __
Six issue subscription.....$100
Complete Guide to DELUXE PAINT II $25
Scenes & Objects for SCULPT 3D.....$25

Name_____
Address_____
Postcode_____Day Phone ( ) _____
Signature_____
Bankcard No:_____
Expiry date_____

Postage and packaging is included in the purchase price
We regret that Hotdisk 1 is no longer available

ARTSCAPE STUDIOS (02)977-1829
P.O BOX 751, MANLY, NSW. 2095

mediately from Clear Technology.

Photon Paint 2.0

Photon Paint 2.0 for the Amiga is out. - with some considerable enhancements and special effects such as animation, new wrap functions and alternative drawing sources.

Here is a list of what *Photon Paint 2.0* has to offer: Multiple Swap Pages with special animate commands. Sophisticated brush operations like twist, adjustable transparency, tilt, resize, flip, rotate, bend and more. Luminance with definable source location and intensity.

Various types of fill functions including flood and background fills. Blending, add and subtract colours plus full dithering. Surface Mapping: wrapping of 3D objects such as cones, spheres, cubes and free hand shapes. Contour Mapping: wrap a brush around a 3D "landscape". Automatic shadowing with adjustable size and offset. Stretch brush function. Alternative drawing sources such as rub-through, pantograph, and brush patterns. Complete set of colourization features. Air brush with definable spray area. Fill polygon tool and polygonal brush cutter. Stencil feature protects defined areas. Gradient colour spreads.

Registered owners of *Photon Paint* were notified of the upgrade policy a month ago.

Ameristar Ethernet board - networking

[For those who aren't sure what Networking is - essentially it's a way to link up a number of computers with the object of sharing resources between them, such as storage devices (hard disks, etc), laser printers, and so on. Good to have if you have a number of Amigas in your business, or somehow spread around.]

Report in AJ by John Toebes (of PopCli fame) - he was able to easily install and configure the system and link from his A2000 to other 2000s and other Unix systems, and mount his home directory on a Unix machine as another volume on his Amiga, using FTP (File Transfer Protocol) and TELNET, and NFS (Network File System). He says SMTP (Simple Mail Transfer Protocol) is missing, but the software is very well put together. Around US$900... We rang the company below, and ended up speaking to Dale Luck (or "Duck" on Bix), one of the original Amiga men from Commodore-Amiga. He's sending us all sorts of information about ETHERNET, along with X-WINDOWS for the Amiga to talk to other systems such as the Sun workstation, and also his "Boing Mouse", a 3-button mouse for the Amiga. News as it comes to hand. Further information: GFXBase, 1881 Ellwell Drive, Milpitas, CA 95035; Tel: 0011 1 408 2621469.

Scientific and engineering peripherals/ software

ACDA is a company specialising in this stuff - as lifted from an overseas magazine, their products (and there are many more) include: - DIGISCOPE, an oscillator emulator US$139.95 - PROTO-5K, single channel A/D converter US$279.95 - PROTO-40K, A2000 card with 16 channel 12-bit multiplexed A/D converter and a 3 channel programmmable timebase US$1895 - AMIGAVIEW, about 100 routines and macros for C programmers US$152.

More info from 220 Belle Meade Ave, Setauket, NY 11733. Tel: 516 6897722.

RGB Computer and Video Creations

A very active company, responsible for the SUPER-VHS VIDEO WORKSTATION which lets you perform network-quality professional video editing with the Amiga plus some video equipment. They also produce the DELUXE HELP series, help on disk for *DPaint*, *Pagesetter*, *Calligrapher*, etc. Info from Tel: 4007 622 0138.

Comspec Bernoulli hard drives

Comspec seem to be motoring along these days with Amiga hardware - now available is their Bernoulli system, using 20 Megabyte removable cartridges, meaning unlimited storage, ease of backup and disk access speed equivalent to a hard drive.

Autobooting is possible under Kickstart 1.3, and FastFileSystem is supported. You must also buy a Comspec SCSI host adapter (US$249) for your particular Amiga system. It's possible to get the SD system allowing room for two 5.25" drives (one of which could be a normal hard drive), or a 3.5"/5.25" combination, or a single 5.25" Bernoulli card for the 2000, costing US$1625 - I guess the 500/1000 models cost rather more. Info from: Comspec, 74 Wingold Avenue, Toronto, ONtario, Canada M6B 1P5 Tel: (416) 7853553.

Spirit's wedge

An alternative is Spirit Technology's "wedge" to enable Amiga owners to use IBM hard disks and controllers - although such products have been available for a while (The Wedge and Palomax), it is said that this product needs no "hardware hacking" and comes in a nice box. Info: Spirit Technology, 220 West 2950 South, Salt lake City, Utah, 84115. Tel: 800 433 7572.

Soft.Link's utilities- multiple menus and preferences

These look good and could be useful. STUFF-IT is a way to customise your own menus for any program at any time, and is rather like the pd programs HANDYICON or ZIPPY (see PD UPDATE). Price is US$39.95 & $2 p&p. Their other utility is MULTIPREFS, which allows you to set up and have available a variety of Preferences settings. Not a bad idea, but we've got a SETPREFS disk in the Library, set up by Eric Holroyd, which does the same ... for free. More info from: SoftLink Inc., P O Box 304, Coventry, RI 02816.

Hypertext for the Amiga

Or is it just hype? Calling itself "An outline processor and word processor and picture display with Hypertext links to text and applications", could this be a competitor to the Mac Hypertext phenomenon? Introductory price US$59, from: Poor Person Software, 3721 Starr King Circle, Palo Alto, CA 94306 Tel: 415 4937234.

Creating customised calculators

"*Integrated Calculation Engine*" is a software package, billed as NTSC or PAL, which will allow you to create your own calculators - engineering, mathematical, financial, scientific, statistical and trig. Costs US$89.95, and more info available at: King Publishing, 921 32nd Street, Sioux City 1A 51104.

We don't only give you a Business Computer.

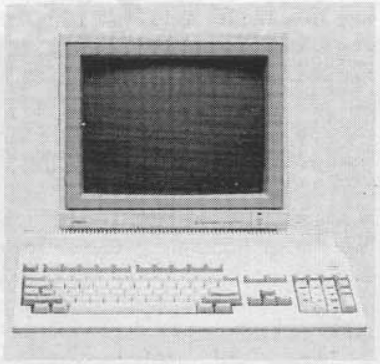
We give you a choice.

Commodore's extensive range of PCs gives you a wide choice of PC options.

A choice of configurations and concepts from Amiga graphics to powerful AT standard performance.

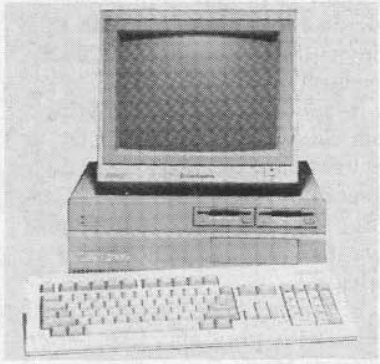
See the full range of Commodore business computers at your Commodore dealer now.

See Your Nearest Commodore Dealer.



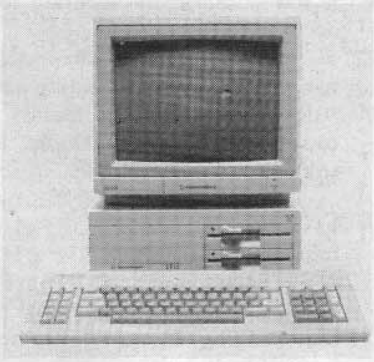
Commodore Amiga 500

With features such as multitasking and upgrading options, it's Australia's best selling small business computer.*



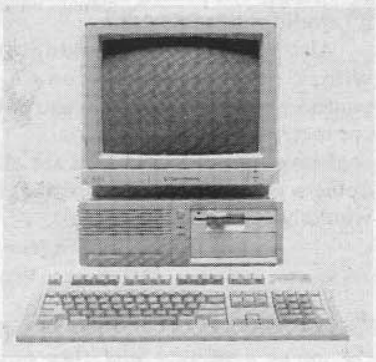
Commodore Amiga 2000

A true investment, because of its capability to expand, it offers multitasking to ensure versatility and increased productivity.



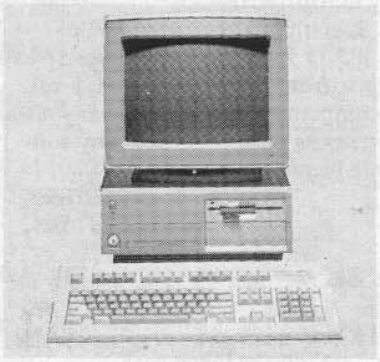
Commodore PC Colt

The quality PC-XT equivalent, ready to start work with colour or mono capability.



Commodore PC 10 III

The small footprint of this PC will save your desk space, it's also expandable – definitely a high performance XT.



Commodore PC 40 III

The high specification AT compatible, for the power user, delivers exceptional performance in a small footprint.

commodore

SMARTER.

*Source: COMPASS RESEARCH Micro StoreBoard.

JSA COM 0313

LETTERS

MPS-802

I hve recently purchased an MPS 802 printer for my 64 and have found it to work fairly well. Although I have one main problem, how do I print graphics with this printer? It just goes haywire every time I try!

It refuses to print anything from *Geos* and doesn't even try to print anything at all if I try to do a screendump with my Final Cartridge III. If I get any response from it at all it just prints a load of garbage.

It works like a charm when I use it with programs like *Letter Writer* or *Magic Desk* I, however.

One of my friends who knows a bit more about printers than I do said I need to buy a chip to plug into the back of my printer to enable it to print graphics. Is this so? If so can you tell me where I can purchase one of these chips (preferably in Australia).

I would appreciate any help.

PS. I have a Blue Chip disk drive from Pactronics and I can recommend this drive to any 64 owners as I am yet to find any software incompatible with it.

James Hilder,
Australind WA.

Ed: You need the right driver - it is on the 1-3 Geos upgrade - or try MPS-802 Publisher program from Prime Artifax (02) 807 0011.

The 802/1526 does not print graphics in the normal fashion - so special programs or printer drivers are needed.

C64 upgrade path

I am a great fan of *Geos*, and use it to death. I am 15 years old and in year 10 (form 4 for all you oldies) at school. So far this year I have used up 1600 blocks of work disk on assignments for school, and we are not even through the first term.

I have been considering updating to a 128 for ages, and with the extra RAM, and the capability to use the 128 *Geos* range, it seems it would be much the wiser. I currently have an old 64 (1982 model I think), an 86 model 1541 drive, and an MPS 1000 printer. I run through a portable TV, so that I can watch TV during loading. I have never had any trouble with the keyboard, drive, or printer, and all are in very good nick.

How much of this could I use on a 128? How much could I get for my computer if I traded it in, and how much would I have to fork out for such a swapover?

I'm not all that smart, and I hate school, so the computer is what gets me my marks at school. I love using computers, and without it I would still be in year 7.

Also I have been thinking of writing some hint sheets for Adventurer's Realm, so who would I contact?

I love the mag, and you are all doing a great job. It's the sort that I would like one day.

Alastair Edgington,
Mitcham, Vic.

Ed: You would be best to sell the lot as a package and then buy secondhand again from someone who is using Geos applications. Prices vary a lot from place to place - check your Trading Post computer section - or the Age, for an idea.

(Just send your Hint Sheets to the address given in Adventurer's Realm.)

A mixed bag

I really enjoy reading ACAR firstly because it's Australian and secondly because it has a friendly feeling which is easy to relate to and it has just the right mix of technical and entertainment in the magazine. Also it doesn't expect you to have several degrees in computing and it relates to people with an IQ bigger than the number of fingers and toes on them.

Whatever happened to the C64 high score table in the April (Vol 6 No 4) edition? I would just like to add to the Amiga top score table:

Testdrive 163070 (I think you missed a zero in Colin Russell's score).

Is there any chance of getting colour pictures of the games?

Personally I think that having percentage ratings stinks. They should be out of ten because having 101 different possible numbers is too numerically accurate to be accurate.

Jumping back to Richard Pernatin's letter, I enjoy reading a split Amiga/C64 magazine mainly because I have both machines, and so do many other people.

I have to agree that it is futile to have laws on hacking. I feel still more emphasis should be put on copying copyrighted programs. The government should have people teaching the kids at school (myself included).

Philip Reichert.
Beecroft, NSW.

PAL to NTSC conversion?

A number of years ago I read an interesting letter in the British *Your Commodore* magazine.

The letter was from someone who was moving to America and

wished to take his beloved C64 with him. The greatest problem he would face in doing so would have been the NTSC signal required from his 64 to interface with an American television set (Americans always like to be different).

They asked whether an adapter (or something) was available to "re-modulate" PAL into NTSC.

The magazine replied with an answer along the lines of such a device being available, however, the expense for one of these would outweigh the practicability of such a venture. The magazine suggested that he sell his C64 and buy a new one in the USA when he arrived.

"That's a reasonable statement," I thought at the time.

More recently, I realised that CBM had saved themselves some money (again) by internally hard wiring the signal selection to PAL (or NTSC) for explicit use in the region of sale. Evidence appears on my schematic of the 64 that such a jumper exists between pins 1 and 10 of 74LS193 chip and pin 4 of 74LS74.

It's only reasonable to suggest that if this jumper was altered, in a similar way to that which is done to hard wire the device number of a 1541, compatibility between these signals is possible; inexpensively; without the hassle of resale of the present unit.

So the question remains, "Is there a feasible way of converting your C64 to NTSC?" and "Is this the way to do it?" I think so.

I.S. Mulry,
Kingswood, NSW

Ed: Of course, you would also need a new modulator, and power supply. Anyone want to let us know if this works?

Commodore user group

We are a very enthusiastic Commodore Users Group in the Western Suburbs of Melbourne. We meet every third Sunday.

The name of the club is VRI Commodore Users Group, and we meet at the VRI hall, Stewart St, Braybrook, behind the squash courts. The persons to contact in the club are: Charlie Carlow (03) 337 0900, Rod Mason (03) 306 4063, Stuart Pearmain (03) 391 2156, Bill Howe (03) 311 8253.

Rod Mason,
Glenroy, Vic.

Problems

I was wondering if you could answer a few queries I have. I own a Commodore 128D and a Citizen 120D printer and I would like to know if there are any professional typesetting programs available for my setup. All of the finished products from programs like this that I have seen, have that "computer look" about them, if you know what I mean. I would appreciate it if you could also give me some prices.

In Vol 5 No 7 under "Ram Rumbles" mention was made of the availability of 1581 disk drives. In the same issue, in a review of *Geos 128*, the reviewer said it was not possible to copy a whole disk in one pass from a 1571 to a 1581 and that it had to be done file by file. I imagine that means only when using *Geos*. I would like to know if you can copy disk to disk when not using *Geos* but perhaps using the DOS shell or similar.

A friend of mine is considering purchasing a computer. She would like one that her children can use and also herself, for word processing etc. I was going to recommend a 128 but I thought perhaps you could recommend something better or more suitable.

My computer is approximately four months old and I seem to have a lot of trouble loading and running C64 programs, but not 128 software. A friend of mine also has a C128 with updated ROMs in the disk drive and sometimes has less trouble with the same software. I was wondering if you could explain why and what I could do to fix this problem.

D.B. Edmunds,
Leumeah, NSW.

Ed: Dot matrix print will always be dot matrix print - "professional" DTP software on the C64/128 does not exist, but there are some great amateur packages such as Geopublish (about $90) and Paperclip Publisher ($50) which produce reasonable output. Geos ($99) can also be output to a laser printer.

I would recommend that your friend should buy the Amiga 500 - try secondhand if price is a problem. The Amiga is relatively inexpensive, and is great for serious work and entertainment.

Your loading hassles could be due to a number of problems - drive alignment, or just plain overly complex disk protection pushing your drive beyond its limits. Of course new ROMs have overcome some compatibility problems with the 1541 based software.

Joystick recommendations

In your joystick review in ACR Vol 5 No 12, you failed to mention one characteristic of the Competition Pro 5000 which frustrates me.

I refer to the effect when playing, say, *Boulderdash II*, where the "man"is moved either vertically then rapidly horizontally, or vice versa, to achieve the objects of the game. I expect to move the joystick one way, then without centring it, feed in a 90 degree change of direction.

The Pro 5000 does so vertical to horizontal, but in the other direction change, must be neutralized first. (It always catches me in the heat of the moment.) Cheap ones do it, so why not so-called "arcade-style" types?

As it cost nearly $50 in July 1988, I wrote a complaint to the distributor OziSoft, and have not received a reply as at March 1989. Do I expect too much, and are all microswitch models like it? Although I feel I have above average reactions for a 53-year-old game playing "kid", I still need all the help I can get in speed.

G.W. Barron,
Cootamundra, NSW.

Entertainment Roundup

by Andrew Farrell

Amiga World just gave *Dragon's Lair* a scathing review. They complained about everything - the disk loading, the game play, the bugs - everything. Well, we say foo to you - *Dragon's Lair* may be slow between scenes, and it may be irksome for arcade shoot'em up freaks. But, if you have played *Dragon's Lair* on the laser disk machines in video parlous at two dollars a pop, the Amiga version is a welcome and playable alternative. Instead of ripping to pieces games that are trying hard to break new ground, let's at least give credit where credit is due. The game is not everyone's cup of tea, but you must admit, *Amiga World*, that *Dragon's Lair* is one of a kind in the animation department. Many readers have asked for tips on the game. Amiga owners can use the key sequence mentioned in Notepad. For the rest of you here's some hints.

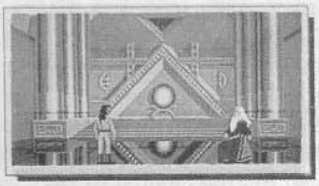
- Yes, there are two drawbridges! The second is a reverse of the first. (This pattern is repeated in later scenes).
- When experimenting to find the right moves for Dirk, only try one move at a time - that way you will know whether it worked. Dirk can only do one thing, you have to wait and let him move.
- In some rooms, a flashing area tells you where to move next. The trick is to have selected that direction before the flash appears - once you see it chances are you're too late.
- Don't always move in the logical direction of the scene - some moves should be made according to where you physically want to move on the screen rather than in the scene. Follow that?
- If you're really stuck - watch the demonstration carefully. Otherwise - enter the backdoor mode and study Dirk as he moves around the screen.

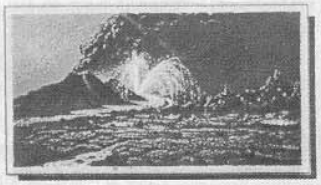
In brief: The Kristal

Another game boasting multiple disks and amazing graphics is *The Kristal*. I was disappointed to find occasionally the wrong backdrop loaded - wrecking the current scene. The animation seems to have some glitches too. Disk swapping is constant - you really need four disk drives.

The plot is thick - you'll have to read the book - in essence it is an adventure game with some arcade scenes. As you pass other characters on your travels along the screen, you can talk to them. The parser is quite impressive.

Check it out when you're in your favourite store - meanwhile we've whizzed our review copy down to Adventurer's Realm for a thorough review. ❑





Australian Commodore and Amiga Review

AMIGA ANNUAL 1989

✦ Word processing ✦ Graphics
✦ Communications ✦ Databases ✦ Games
✦ Complete Software Guide

Only $5.95 - don't miss it!

Post to Gareth Powell Publishing 21 Darley Road, Randwick, 2031 or telephone and give your Bankcard number

Name.....Signature.....
Address.....
.....Postcode.....
Cheque.....Bankcard.....No..... Exp Date.....
Please Send me ..... Copies of Commodore Annual 1989 at a cost of $5.95 each plus $1.00 P. & P.

SUPER HANG-ON

Okay folks, this is the motor-bike game of the decade, and you will have to super hang on to your socks. Andrew Farrell jumped on the tricked up two wheel power packed rocket to file this review.

Last month I mentioned *Super Hang-On* in the editorial. One month later I'm still wrapped. This has got to be in the running for arcade game of the year.

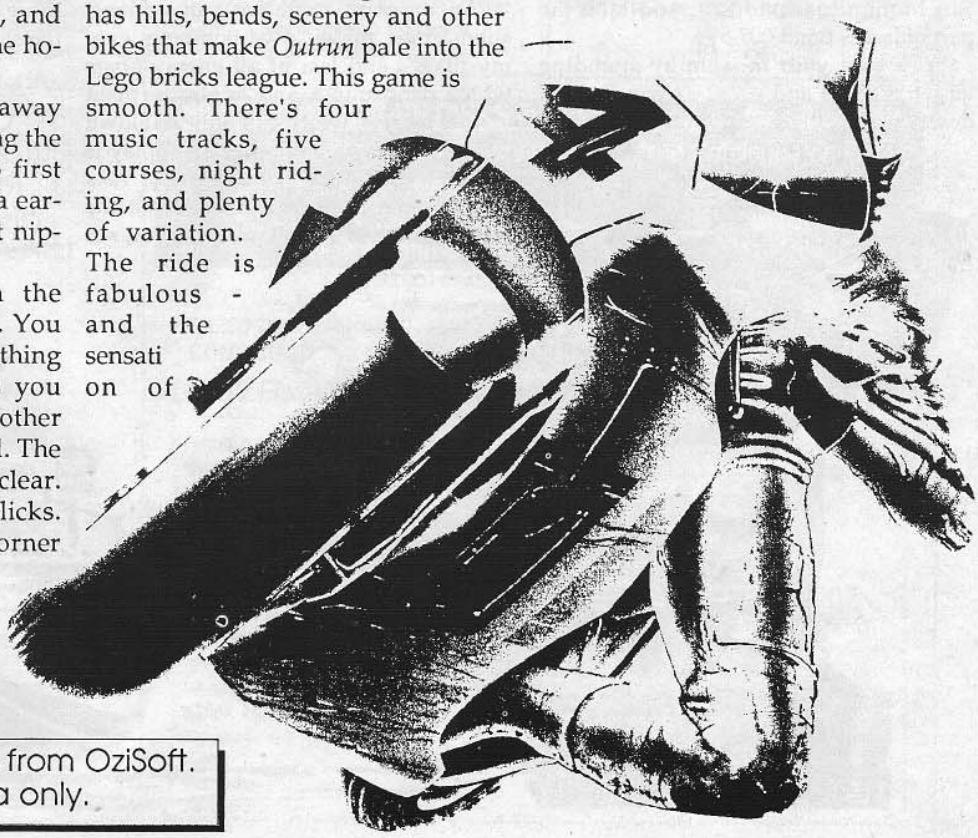
You are shown a behind-the-bike view of you, your bike and the tracks ahead. The starting lights flash, and the other bikes scream off into the horizon.

Foot to the floor, you heave away from the start, eventually catching the last rider just as he banks into first turn. You swing early and take a earlier line through the bend - just nipping past his front wheels.

As you wind her out in the straight, your speedo turns red. You press the fire button - and something like an afterburner slingshots you down the straight. Signs, trees, other bikes all rush by in perfect detail. The ride is smooth, the road ahead clear. You're pushing just over 320 clicks. This is it. Suddenly a sharp corner races into view. You brake and start to pick your line. But it's too late. You hit the chalk, and then skid hopelessly off the track. Just when you think you'll sneak back on behind the third rider you collect a limb and go head over bike into the grass.

Super Hang On is tops. The road has hills, bends, scenery and other bikes that make *Outrun* pale into the Lego bricks league. This game is smooth. There's four music tracks, five courses, night riding, and plenty of variation. The ride is fabulous - and the sensation of riding a bike is a blast.

The final test comes when ten non-computer head friends drop by and all love the game just as much. My advice. Buy it! ❑



AMIGA

Our review copy came from OziSoft.
RRP $49.95 Amiga only.

LIVE AND LET DIE

by John Hatchman

M has given you a top secret mission: "Find Mr. Big, and don't come back until you do".

Q has given you his latest gadgets: "Be very careful with it, 007. It is the fastest and most dangerous speedboat ever made. Just to make sure you find Mr Big, we have arranged some practice sessions for you in extreme conditions. You'll go from the desert to the icebergs before we let you loose in Florida - Mr. Big's home country."

Dr Kananga, the ruthless and infamous Prime Minister of the Caribbean island of San Monique has decided to supply free heroin to America, hoping it will cause such an upset and make him so rich he can supply arms to Eastern bloc allied San Monique. Obviously, you take the part of James Bond 007.

You start your mission by attending target practice and desert exercises all over the world. Select target practice in certain parts of the world, then once you think you have gained enough skill to match the might of Mr. Big, you can take a shot at the title.

Play starts by taking practice runs at any location you select. Once you get in your super high tech speed boat you start the action happening by either using bullets out of your gun or the three missiles which are dropped to you in a crate by a helicopter. Run over the crate to collect your missiles - any delay will cost you fuel.

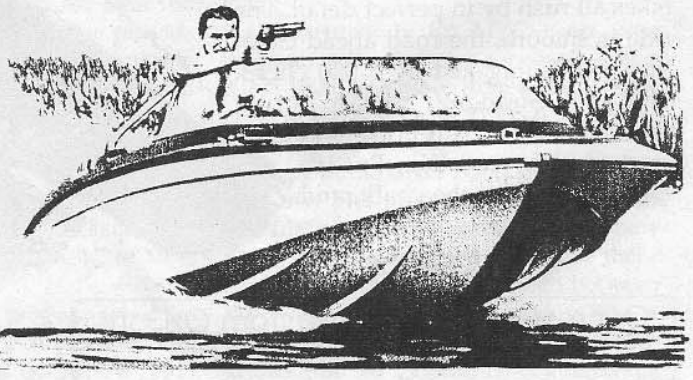
Fuel can be picked up along the way, it is contained in small canisters in the water. You must also run over them to collect it.

Enemy-wise, there are gun stations, submarines, mines, dive bombing, enemy planes and last of all enemy boats which drop mines and booby trapped fuel barrels, which can only be blown up with a missile. Gameplay is very much like *Buggy Boy*. As a matter of fact, it is almost the same except you are in a boat, not a buggy.

Whilst on the mission you must launch your boat along a waterway at great knots, scale slopes, dodge rocks and whirlpools. Other obstacles included are locked gates which can only be blown away with a missile, and dark tunnels which make life quite uncomfortable. Once you get to the heroin processing plant you can only destroy it by launching off a log and firing a snuff missile. Good luck!

Gameplay is a wee bit sluggish and dodging some obstacles at high speed isn't easy. As for graphics, they're quite good. As a matter of fact they are much better than *Buggy Boy*. Not a bad little game for the price. Plenty of difficult challenges and obstacles. Don't just sit there, go and at least look at this game in the shop. ❑

Our review copy came from Questor (02) 662 7944. RRP $ Amiga $49.95, C64 disk $34.95, cassette $24.95



Westend COMPUTERS

MAIL ORDER

(03) 350 5144

5.25" disks
Packets of 10
$6.50

Call NOW for magazine subscriptions:

- Amazing Computer
- Amiga World
- Amiga User
- Amiga Computing
- Amiga Transactor
- ST/Amiga Format
- The Games Machine
- Commodore User

3.5" disks
$19.95
Box of 10

MOUSE MATS NOW $9.95

HARDWARE

Star Cursor joystick	$49.95
Aprospand 4 cartridge motherboard	$69.95
C128 Ram expansion	$329.00
C128 64k video upgrade (including Ram)	$99.00
Action Replay v.5	$149.00
Expert Cartridge v.4.1	$129.00
1541 compatible drives	$249.00
Amiga hard drive kit (includes case, interface & power supply)	$395.00
Deep Scan Burst Nibblers 1541 and 1571	$79.95

SOFTWARE

Maverick (Renegade II)	C64	$49.95
Geos II (THIS IS THE LATEST0	C64	$89.95
Geoprogrammer	C64	$89.95
Geopublish	C64	$89.95
Geofile	C64	$89.95
Geocalc	C64	$89.95
Geowrite	C128	$89.95
Disk Doctor (drive diagnostic tool)	C64	$42.95
Test Drive II	IBM	$69.95
Test Drive II	Amiga	$59.95
Dragon's Lair	Amiga	$89.95
Gunship	Amiga	$89.95
Space Quest III	IBM	$59.95
Techno Cop	IBM	$59.95
Lombard Rally	Amiga, IBM	$59.95
Ultima V	IBM	$59.95

Super Range of Abacus Books

Amiga for Beginners	Dos Inside & Out
Basic Inside & Out	C for Beginners
Tips and Tricks	Disk Drives Inside & Out
Machine Language	Dos Quick Ref Guide
System Prog Guide	3D Programming in Basic

Program disk available for most books

(03) 350 5144 402-404 Bell St Pascoe Vale 3044	**(03) 670 1533** 277 Elizabeth St Melbourne 3000	**(03) 720 6722** Shop 3 40 Station St Bayswater 3153	**(07) 221 0055** Shop 86 The Myer Centre Brisbane 4000

Incredible shrinking Sphere

by Richard Silsby

As a registered member of the Medical Practitioners Association, Psychiatric Division, I would warn all potential *I.S.S.* victims that the *Incredible Shrinking Sphere* has scenes that could affect the mental health of all players.

The reason for this warning is that it shows in graphic detail, the three dimensional workings of a ball. That isn't so bad, you say to yourself. But these graphics are in such detail that before *I.S.S.*, they have never been seen on mortal man's display units to this time, and it is my belief that the human race is not yet prepared for this assault on the world market by Activision.

Along with the graphics being out of this world, the music is such that it will have you in a trance by the end of the opening credits. All in all, the effects will have a hypnotic gravitational force on players. They will be unable to either take their eyes off the screen or raise themselves out of their chairs. Such is the effect that this game has.

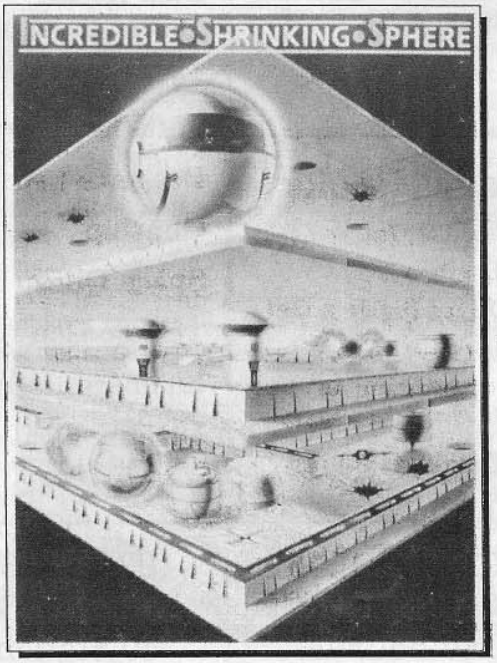
Now to inform you about what you will actually be doing if you do come under it's spell. You will position yourself in one of the Sphere Corps' battle training arenas, which is also called the Death Run. Your purpose is to rescue Colonel-in-Chief Matt Ridley, who decided to test his skills behind the controls of a Fighter Sphere, but failed. His fighter sphere has been disabled by Assassin Spheres and he is now stranded in the Run.

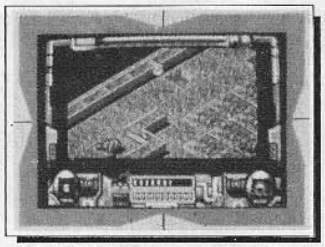
You will go into the Death Run with the same ship that the Colonel had. This latest advance in stealth craft technology portrays your ship as looking similar to a pinball. Your ship is invisible to all on the outside world, only you and your co-pilot can actually see the plane. I recommend that you don't tell that to anyone though, or they will have you admitted to an institution, quick smart. But the people in the outside world are not your problem, it is those nasties that lurk around the corner.

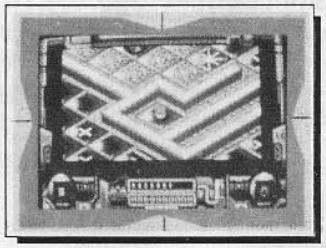
There are a few things that you need to be aware of. When you roll across certain tiles, your mass, volume, or inertia will be affected. You will have to be well aware of the location of these tiles because at times you will need to be heavier, for example when taking a short cut through moving walls. Or lighter when traversing damaged tiles.

Also you will have to know where ISMO Assassin generators are, because this is the production area of deadly assassin spheres. Seeing as the guy you came in to rescue was affected by these, don't think that they won't be hungry enough to get you. There are Black Holes, White Holes, Ammunition Supply dumps, Exits, Ramps and even a Prison.

So you will have to tread carefully if you do not want to become another statistic of the Death Run. But you will need to be at your peak of concentration and with quick eye to hand coordination. Good luck cadets, I am sure you will need it in the *Incredible Shrinking Sphere*. ❑





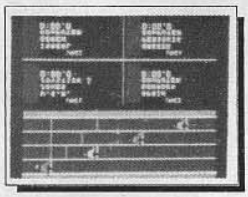
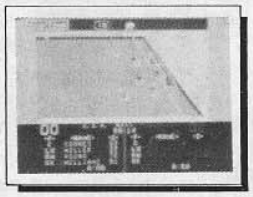
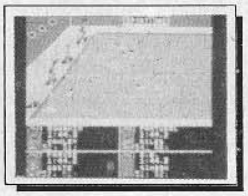
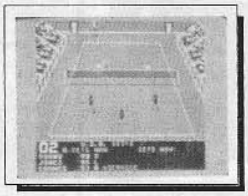
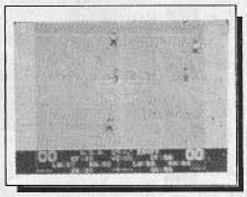


Our review copy came from OziSoft (02) 211 1266. RRP $49.95 Amiga, C64 disk $35.95, cassette $26.95.

SPORTTIME™

International TEAM SPORTS

by Andrew Farrell

Here's another of those international events for one or two players and a strong joystick. Or so I thought. *Team Sports* is a actually more a game of tactics rather than dexterity. Step one, pick your team.

From the main menu you select teams for each of the five events - Water Polo, Soccer, Volleyball, 4 x 400 Track Relay and Swimming. Each selection must be based on the players' skills - with some players competing in a number of different events. There's a whole web of rules on how the draw against the other teams works. I skipped them, and headed out into the soccer field for a look at the graphics and animation Mindscape have designed. Computer vs computer, the whistle blows and the kick off sends the opposition scurrying toward their man.

The animation is smooth, although the characters are somewhat jaggy. The field design is bare, with no crowd visible breaking down barriers or throwing confetti. Nevertheless, game play was very slick. The players acted realistically passing the ball and marking others. They quickly move into defence positions or make a smart passing manoeuvre down the center.

Next on to swimming. The gun sounds, in go the four swimmers with a splash. Making their way to end of the pool, they turn and for a moment the splashing subsides. They resurface and complete their lap. The next swimmer dives in. At the bottom of the screen numbers flash madly showing time, and how the players are faring. A small top on view is displayed. Good graphics, but irritating splashing sounds.

By now I'm itching to get in on the action. There's no way to stop an event in progress, so I sit and wait and watch. Controlling the players happens using Flow-Control TM - a catch name for a somewhat confusing method. In some events this amounts to the usual control-a-player who is highlighted method. In other events you act as coach, fine tuning the level of effort the competitors are putting forth, and timing events such as the baton exchange during the relay.

Some aspects of this game tack an annoyingly long time - such as the loading of each segment. Worse still, if you happen to activate a game with teams that are not human controlled, you have to watch the entire match or reboot. There's no way of aborting part way through.

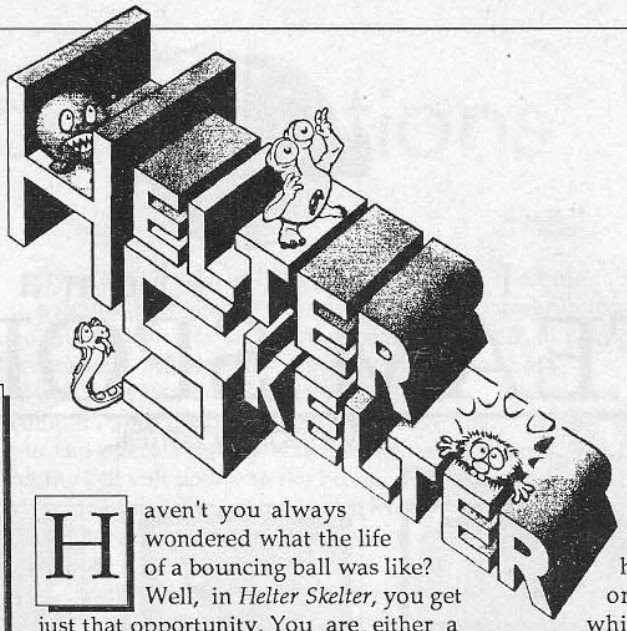
After some messing around, I went back and restarted the game. Selecting your team is a bit like a role playing game. You place each team member in a number of events depending on his special skills. However, there are limits as to how many events each player can be in, and how many players you can have in one event. After making my selections, I selected volley ball and prepared for action. In the event you actually control the players. As the ball moves around the court, the player who will handle the next action changes colour. You can serve, return shots and set-up other players. You have complete control over where the ball goes. If possible you can spike a shot, hit it left or right, long or short.

On my first serve I missed the ball. However, after rereading the manual I soon got the hang of it. *Team Sports* requires thorough preparation. Read the instructions otherwise you'll find the game is very hard to play. Volleyball turned out to be quiet fun.

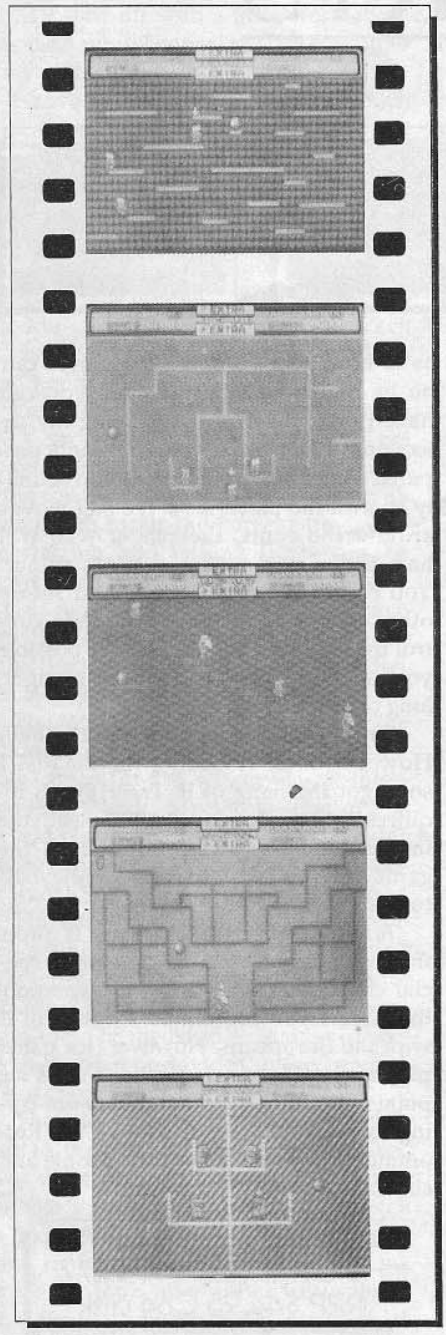
International Team Sports is proof that when it comes to programming special effects and whiz bang presentation, the American programmers don't cut it with the Europeans. However, for game play and realism, this package wins big points. Since that is what they were trying to achieve, *Team Sports* is a hit. Recommended for sporting type people and simulation lovers. ❑

Review copy from YPA Holdings (02) 899 2277
RRP $44.95 C64 disk

Clicked on Games



by Richard Silsby



Haven't you always wondered what the life of a bouncing ball was like? Well, in *Helter Skelter*, you get just that opportunity. You are either a red or blue bouncing ball. Your mission is to bounce around, and knock out the monsters that get in your path. What could be simpler?

First, you have to bounce yourself in and around various monster-containing Platforms. Secondly, you can't indiscriminately bounce on the head of just any monster. You have some sort of dignity even as a ball, you're not going to bounce on any Tom, Dick or Harry monster. You have to bounce on the monster with the royal pointer on his head.

If you do try to squash just any monster you will find a little surprise left behind. You will find that you haven't been successful in putting the monster away, but that monster has just had a baby from your little escapade and now there are two of them. So be selective or you will find your membership at the local Community Ball Members Association expire earlier than expected.

Also if you do only go after the monster with the royal pointer on his head, you get better points. The first monster you hit is worth 500 points, but the next one is worth 1000 points, provided you don't hit the 'wrong' monster in between. The scoring keeps doubling so long as you don't hit a monster that splits in two.

For all of the 80 screens you have a certain time limit to hit all the monsters in the correct order. If you complete the screen before the time runs out you score a bonus of 1000 points for every second that you had left.

Along your way you will see various tokens that you have to collect. The main ones have letters on them which will help you create the word E-X-T-R-A. Collecting all of these gets you an extra ball to play with. The other tokens that you collect will give you extra time, freeze the monsters, and there is even a token that will advance you to the next screen!.

When you have gone all the way through the 80 screens, you can go ahead and design an extra 48 screens to really test yourself. (You should make your way through all the screens in a few days, although I'm still stuck on the 15th.) This addition makes for a game that will be the centre of attention in your family for a long time.

The graphics and sound effects have been well created by the people at the audiogenic Software Laboratories. The sound effects are especially good when squashing monsters, but I found the colours of the graphics a little overpowering.

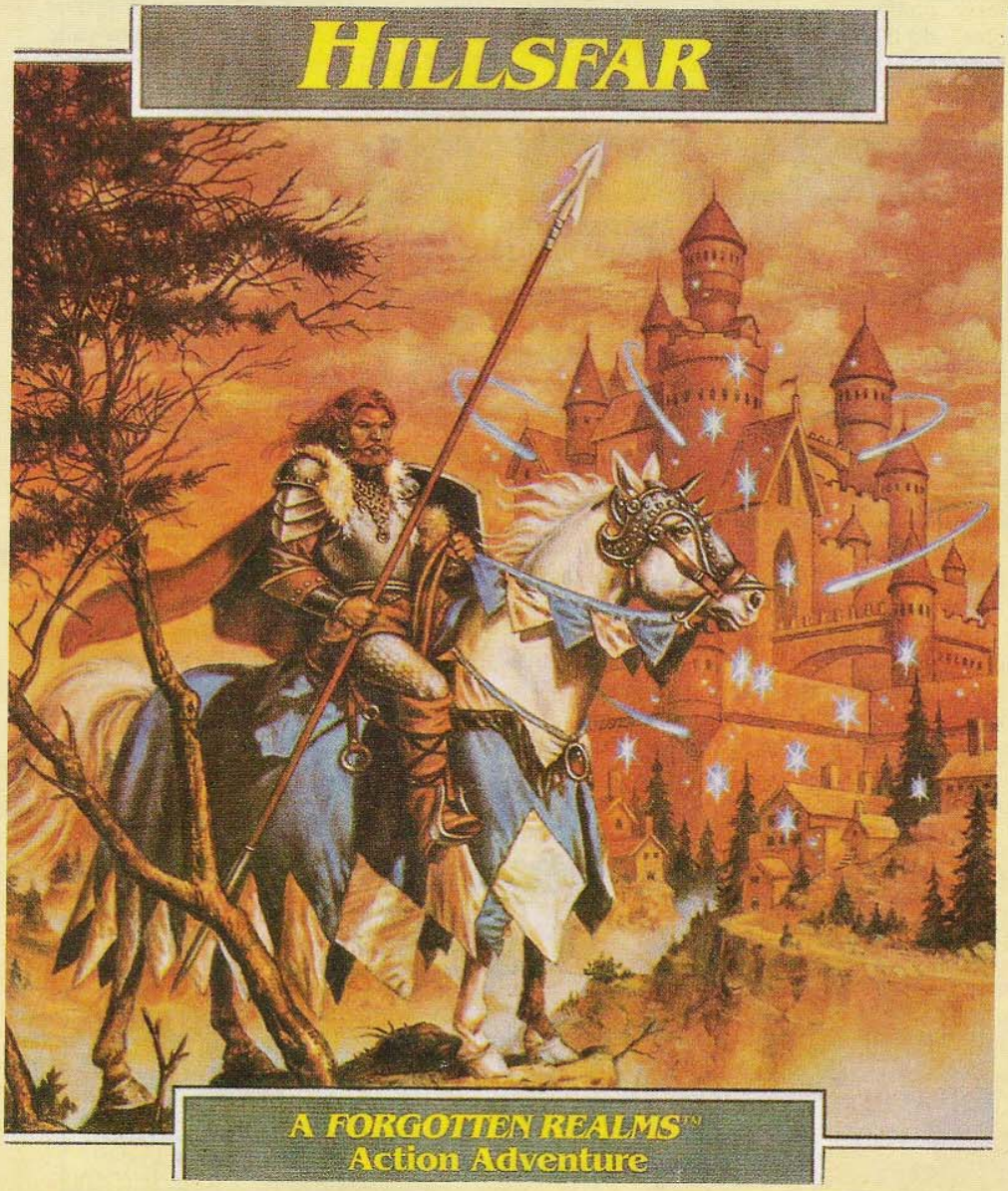
All in all, this is a game that all the family will enjoy playing. What it lacks in game play and difficulty can be added by you when you create your own screens. So go out and sample the life of a ball in *Helter Skelter*! ❑

AMIGA

Our review copy came from Pactronics (02) 407 0261. RRP $39.95 Amiga only.

Prepare for an incredible fantasy when the official Advanced Dungeons & Dragons®

Game Product comes alive on your computer!



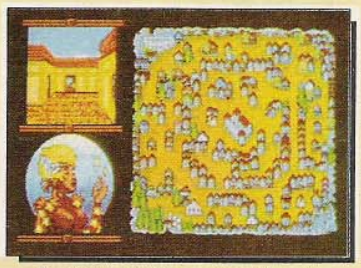
SSI proudly presents *Hillsfar*, the culmination of its collaboration with TSR to bring the legendary ADVANCED DUNGEONS & DRAGONS fantasy role-playing system to your home computer.

Hillsfar is an incredible fantasy that combines the best of role-playing adventures and fast-paced action games. Every visit to *Hillsfar* is a different, exhilarating experience. Explore the city, meet its colourful denizens on the streets or in pubs and discover a quest (there are many possible ones).

Think fast. Move fast. These mini games happen in real time!

For both adventure and action there's no place like *Hillsfar*!

The arena, where you'll fight for fame, fortune or freedom



Beautiful graphics present the city of Hillsfar in both 3-D and overhead views.

Available on Commodore C64/128

SSI

Advanced Dungeons & Dragons and AD & D are Registered TRADEMARKS owned by TSR, Inc.

© 1988 TSR, Inc
© 1988 Strategic Simulations, Inc
All Rights Reserved

Distributed in Australia by:
Entertainment & Computer Products Pty. Ltd. (ECP)
4/18 Lawrence Drive, Nerang, Gold Coast
4211 QLD. Telephone (075) 96 3488

Clicked on Games

Overlander

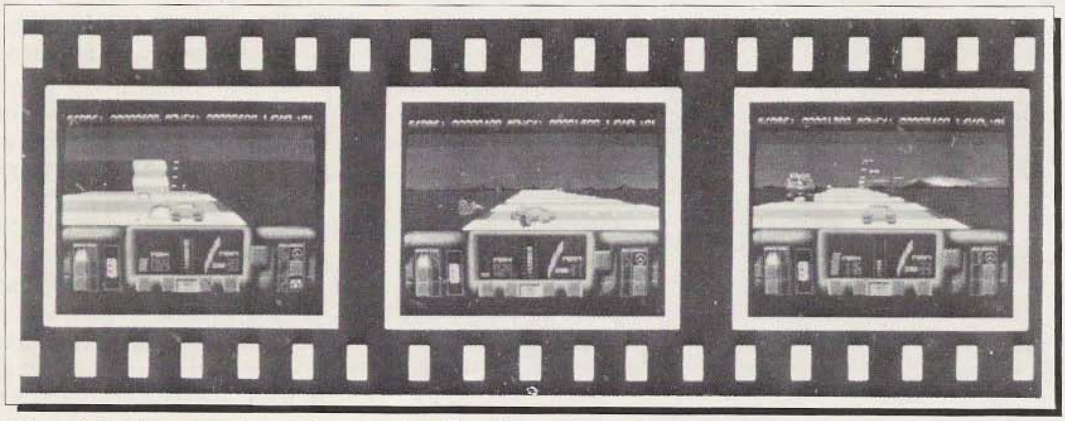
by Richard Silsby

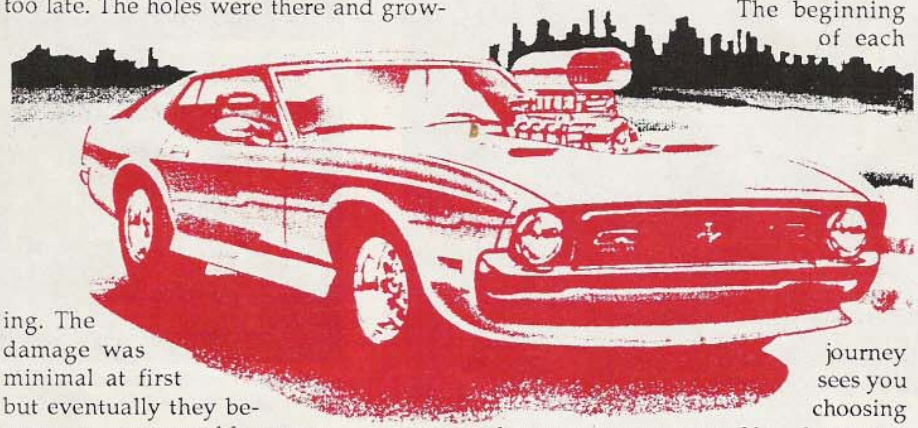
It is the year 2025. A green and beautiful planet that you once called home now resembles Death Valley. The surroundings are like the heart of a red scorched desert. There is little vegetation to be seen in all directions. This has been the case since the last of the dwindling ozone layer covering the earth floated away with the vast quantities of CFC's which filled the atmosphere.

Scientists saw these holes appearing in the late twentieth century, but warnings were never taken seriously until it was too late. The holes were there and growing. The damage was minimal at first but eventually they became an unstoppable apocalypse. The sun caused great damage to the earth and its population moved underground quickly.

But food and other objects have to be distributed around the earth. The roads on the surface are the only viable way to do it at this early stage. Your job as the Overlander is to do this.

The link between the underground cities is the old network of surface freeways, but they are now ruled by anarchic gangs of outcasts. You as the Overlander have only one passion in life, your customized car. Your purpose is make journeys for cash, running cargo across the surface dwellers' gauntlet. Your life is improving your car, which in turn gives you a greater chance of survival.





The beginning of each journey sees you choosing between two cargoes. You have two offers, one from the Federation and one from the Crimelords. The Crimelords will offer more money, however their cargo will increase the danger.

Having chosen a cargo, you prepare for the journey by buying petrol, firepower and performance parts to add to your car. These include standard issue guns, flame throwers, surface to surface missiles, homing rockets, powerful disc brakes, a nitrous oxide injected turbocharger and a lean burning fuel injection system. Also you are able to purchase battering rams, armour plating, bulletproofing and wheel blades, even extra cars can be bought if you have the money.

Just to make your life worse three gangs will try to stop you getting through. These are the Crawlers, Roadhogs, and the Kamikazes.

Altogether a well-thought-out plot, which makes game play more interesting. However the makers of this game must have strained their thinking facilities, as the sound and graphics are a let-down.

Your view through the windscreen sees objects which appear on the screen in very weak detail, and the sound effects are below the standard that game players have come to expect.

Overall this game has the groundwork to be very interesting and hold your attention. But the standard of the other work done makes it a game that I can't recommend. ❑

AMIGA C64

Our review copy (C64) came fromQuestor (02) 662 7944. RRP $49.95 Amiga, C64 disk $34.95, cassette $24.95.

INTERLINK SOFTWARE Pty Ltd

Who cares about customer service ?

We do !!!!!

.... because at *INTERLINK* we know how frustrating it is waiting for something you've already paid for. That's why we carry an extensive stock, so in most cases we can ship your order the day we receive it. A small sample of what we have is listed below at our *EVERY DAY PRICES* which *INCLUDE DELIVERY* to your door, so the price you see is the total price you pay - *NO HIDDEN CHARGES*. We even offer an extra 5% discount on any order over $1,000. You can order by Mail or Phone (Credit Card only) and pay by Cheque, Money Order, Mastercard, Visa or Bankcard. Phone or write to get your copy of our complete catalogue. Start saving money today on your *COMMODORE* software.

Interlink Software ..... *the largest range, the lowest prices, the best service*

P.O. Box 1155 ,Tuggeranong, ACT 2900

Business Hours 9am - 5pm (Mon-Fri) , 9-12 Sat (062) 310 155

AMIGA

AReXX V1.06	69.00	Joan Of Arc	52.00	Basic Compiler 128	95.00	Netherworld	35.00
Aztec C Professional	429.00	Kind Words II	129.00	Batman	35.00	Newsmaker 128	57.00
Battle Chess	64.00	Lattice C++	549.00	CadPack 64	67.00	Operation Wolf	35.00
Butcher II	55.00	Marauder II	68.00	CadPack 128	95.00	Pacmania	35.00
Captain Blood	61.00	MovieSetter	139.00	Captain Blood	39.00	Paperclip III	95.00
ComicSetter	139.00	PageStream	269.00	COBOL 128	67.00	Paperclip Publisher	49.00
Crazy Cars II	68.00	PHASAR V3.0	129.00	Corruption	39.00	Pool Of Radiance	49.00
Cygnes Ed	119.00	Photon Paint II	195.00	Cybernoid II	34.00	PrintMaster Plus	57.00
Data Retrieve	105.00	Pioneer Plague	59.00	Double Dragon	34.00	Questron II	49.00
Deluxe Music	169.00	Print Master Plus	58.00	F16 Combat Pilot	49.00	R Type	35.00
Deluxe Photolab	219.00	Professional Draw	269.00	Fleet System 2 Plus 64	58.00	Return Of The Jedi	29.00
Deluxe Video	169.00	Professional Page	495.00	Fleet System 4 128	76.00	Robocop	35.00
Disk Mechanic	119.00	Project D	74.00	Flight Simulator II	77.00	Rocket Ranger	49.00
Dragon's Lair	79.00	ProSound Designer	199.00	Flight Sim Scenery Disks	39.00	Sinbad	49.00
Draw 2000	369.00	Pro Video Plus	449.00	Fontmaster 128	86.00	Star Trek - Rebel Univ	49.00
Dr T's Midi	95.00	Quarterback	95.00	Fontmaster II 64	73.00	Stealth Mission	77.00
Drum Studio	79.00	Raw Copy	85.00	GeoCalc 64	67.00	Superbase 64	68.00
Excellence!	379.00	Rocket Ranger	58.00	GeoFile 128	95.00	Superbase 128	95.00
F16 Falcon	49.00	Sculpt/Animate 4D	639.00	GeoPublish 64	69.00	Super-C 128	95.00
FACC II	49.00	Sonix	118.00	GeoWrite Workshop 64	67.00	SuperPacman	26.00
Fine Print	68.00	Space Quest II	64.00	GeoWrite Workshop 128	95.00	Super Pascal 128	86.00
Flight Simulator II	77.00	Star Glider II	58.00	GEOS 64 V2.0	95.00	Superscript 64	85.00
Flipside	58.00	Superbase Prof'nal	475.00	GEOS 128	95.00	The Three Stooges	49.00
Forms in Flight II	159.00	Super Hang-On	49.00	Graphics Utility V2.0	67.00	Thunderblade	35.00
Gauntlett II	48.00	Time & Magik	49.00	Home Video Producer	67.00	Tiger Road	34.00
GP Term	95.00	Turbo Cup	49.00	Impossible Mission II	34.00	Times of Lore	54.00
Grabbit II	44.00	TV Sports Football	68.00	Instant Music	35.00	Ultima IV	58.00
GOMF III & Button	105.00	UMS	64.00	Jet	77.00	Ultima V	58.00
Homebuilder's CAD	259.00	Videoscape 3D V2.0	254.00	Movie Maker	25.00	Wasteland	39.00
Instant Music	48.00	War in Middle Earth	67.00	Microprose Soccer	58.00	W.C. Leaderboard	38.00
Jet	77.00	Zany Golf	49.00	Music Construction Set	25.00	Your Family Tree 128	87.00

C64/128

SOFTWARE
We have over 1500 items of software for the AMIGA and C64/128 Computers.

MUSIC
We have over 80 music titles including the complete Dr T range.

EDUCATION
We have nearly 300 titles for all ages, all described in our special Education catalogue.

BOOKS
We have over 70 books on the Amiga & C64/128, some with optional disks.

ORDER FORM	*Product Name*	*Computer*	*Price*	*Qty*	*Total*

Name..... Cheque☐ Money Order☐ Visa ☐ Bankcard ☐Mastercard ☐

Address.....

Full Card No ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Expiry Date..... Signature.....

Will Harvey's ZANY GOLF

by John Hatchman

I'm playing another great golf game - *Zany Golf*. A game of great proportions in fun and entertainment. This new simulation of putt-putt golf is not your normal delivery of putts and greens. We're talking zany, folks.

Okay then, it has nine holes which you must master before progressing. Starting on the first hole you have two extra shots above par to try and keep you in shape for the later part of the course. On some of the holes, for example, you can earn extra strokes by putting the ball into certain places, like doors or holes in the ground.

Another random stroke gainer is a fairy which you must hit to collect a bonus stroke or a time limit which gives a bonus stroke if you manage to sink the ball in the allocated time (not easy).

At the beginning of each hole you get a shrunk version of the green with a set of instructions next to the picture of the hole. Reading these instructions will ensure you will find your way around the many obstacles, or tricks you must use to find or locate the hole easier. If you cant find your way around the hole you may return to the preview of each screen by pressing "?" or "H".

Putting the ball is a simple system, just place the cross over the ball with the mouse and hold the left mouse button down whilst moving the cross in the opposite direction for a set distance and taking your finger off the button to putt the ball in the chosen direction. Operation of the controls is easy via the mouse and very simple. As for the difficulty of the holes, that's left in your capable hands.

Nine holes are allocated in the course. All of which are not all that hard when you figure them out, but just to give you an idea of what they are about, a brief description of each hole is written below. As you should well know, I have not put the holes in order so you can't just zoom through the game with great ease.

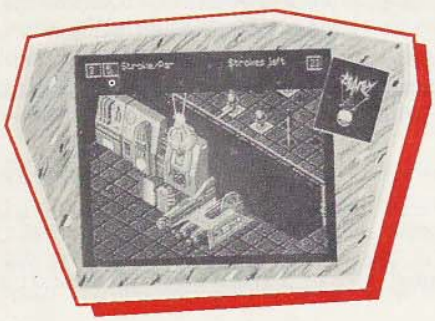
HOLE 1:- Pinball is the name of this hole and it is one of the more difficult holes to conquer. You must shoot your ball out into a pinball style game, and hit two certain objects and sink the ball in a hole before progressing to get anywhere near the hole. Playing the pinball isn't as easy as it sounds, because it has the biggest gap between flippers I have seen on any pinball machine. But you get a free stroke for your efforts and more than often the ball goes straight into the hole.

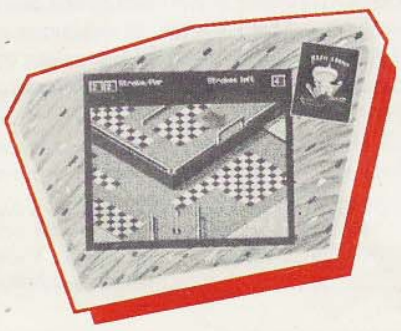
HOLE 2:- Second on my list is Castle. Not such a hard hole to manoeuvre through, once you sink the ball down the first chute. Normally you can get a time limit on this hole for extra stroke. You can also get the ball through the castle gates for a free stroke.

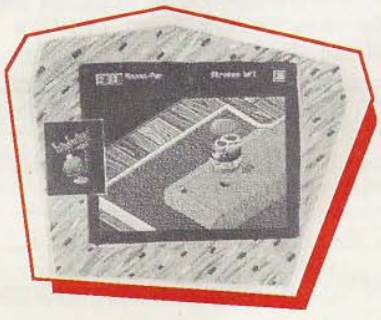
HOLE 3:- Windmill. Playing this hole is a great practice to see how your reflexes are, and to increase your skills for playing *Zany Golf*. Object of Windmill hole is easy. Just aim for the windmill and the ball will do the rest in finding its way to the bottom level, which is where the hole is to be found.

HOLE 4:- Walls. Three walls at 45 degrees to the putting pads. Hole 45 degrees to right of putting pads. Walls go up and down. Rebound off one wall to walk your way right to the hole. Not much involved when you know how on this hole.

HOLE 5:- Hamburger. This hole is a







bit hard to interpret. You must hit along one passage. Bounce the ball off the tomato sauce bottle (or catchup as it says in the game), then it should roll up to a 45 degree angle wall and head straight for the hole. Once near the hole you will notice that a hamburger is covering the hole. Make the hamburger bounce higher by doing a certain something with the mouse fast whilst the cross is over the ball. Not a hard hole to complete, but if you make a mistake, you really throw a spanner in the works.

HOLE 6:- Fans. Another quite easy hole once you get the hang of things. General idea of this hole is to use a set of fans, strategically placed around the frame, to blow your ball in the general direction you want the ball to travel.

HOLE 7:- Ant Hill. One of those get it or lose it holes. The idea is to get the ball to the hole on the middle platform. There is only one problem! The middle platform is high up, and all other platforms have steep slopes on which it is not easy to judge how hard you should hit the ball. Another difficulty is that just when you think you have hit the winning shot the hole moves and the ball rolls right on past.

HOLE 8:- Magic Carpet. This level has only one way to go, but getting the ball to go in the direction you require is not as easy as it sounds. The idea of this screen is to use the carpets to your advantage. Your mouse controls the carpet's powers, and while the ball is over the carpet you are in control. But once the ball leaves the carpet, it either has enough power behind it to make it to the next carpet or it's history and you waste a stroke. Once you get near the hole, getting it in the hole isn't that easy. Anyway I'll leave the putting to you.

HOLE 9:- Energy. This is the final hole. It has NO preview screen, just one hint. This hint is essential to read. As for the hardest hole in the game, I think I might leave it up to you.

Well, now that you have a small guide on what the holes are like in *Zany Golf*, it might make you interested in buying the game. As for the rest of the package, very scarce indeed. But how hard can golf be to learn? (Try the real thing then). Only nine holes makes this game drop a little in value for money, but if you want entertainment for the family, this is it. ❑

AMIGA

Review copy from ECP
(075) 96 3488.
Amiga RRP $49.95.

ROCK Challenge

So you think you know a bit about music. Well, here's a game for the Amiga that will test your knowledge. Do I hear some of you saying that you wouldn't know the difference between Dire Straits and the Fine Young Cannibals?

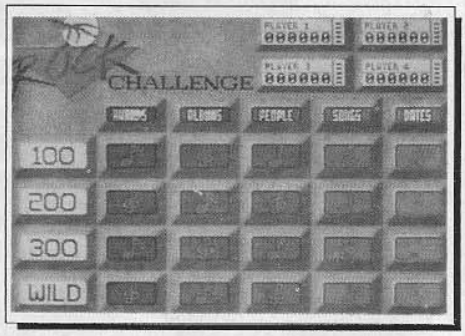
Here's a trivia game that will not only test those who think they know everything that has happened in music between 1950 and 1980. But it will also help to educate both young and old in some of the interesting points of the music world.

You can choose your *Rock Challenge* questions from five different topics, with a value for each. The topics to choose from are Awards, Albums, People, Songs and the hardest of all, Dates.

Points are awarded for each question that you get right, from 100 to 300 points, plus a WILD question which will randomly choose questions and the value for the correct answer. An incorrect answer halves the value for that question, and a second incorrect answer will cause the question to be removed from the selection board.

Questions are presented such as, for Awards, "In 1986 Dire Straits won platinum discs galore, for what album?" For Dates you may get a question like, "What year did Diana Ross leave the Supremes?" For the Albums section you may be asked, "What is the title of the Elton John album taken from the movie *The Wizard of* OZ?" For Songs, "What group gave us the song "The Eye of the Tiger?" And finally under the People section you might have a question like, "Before settling on the name The Beatles how many other names were the group known as?"

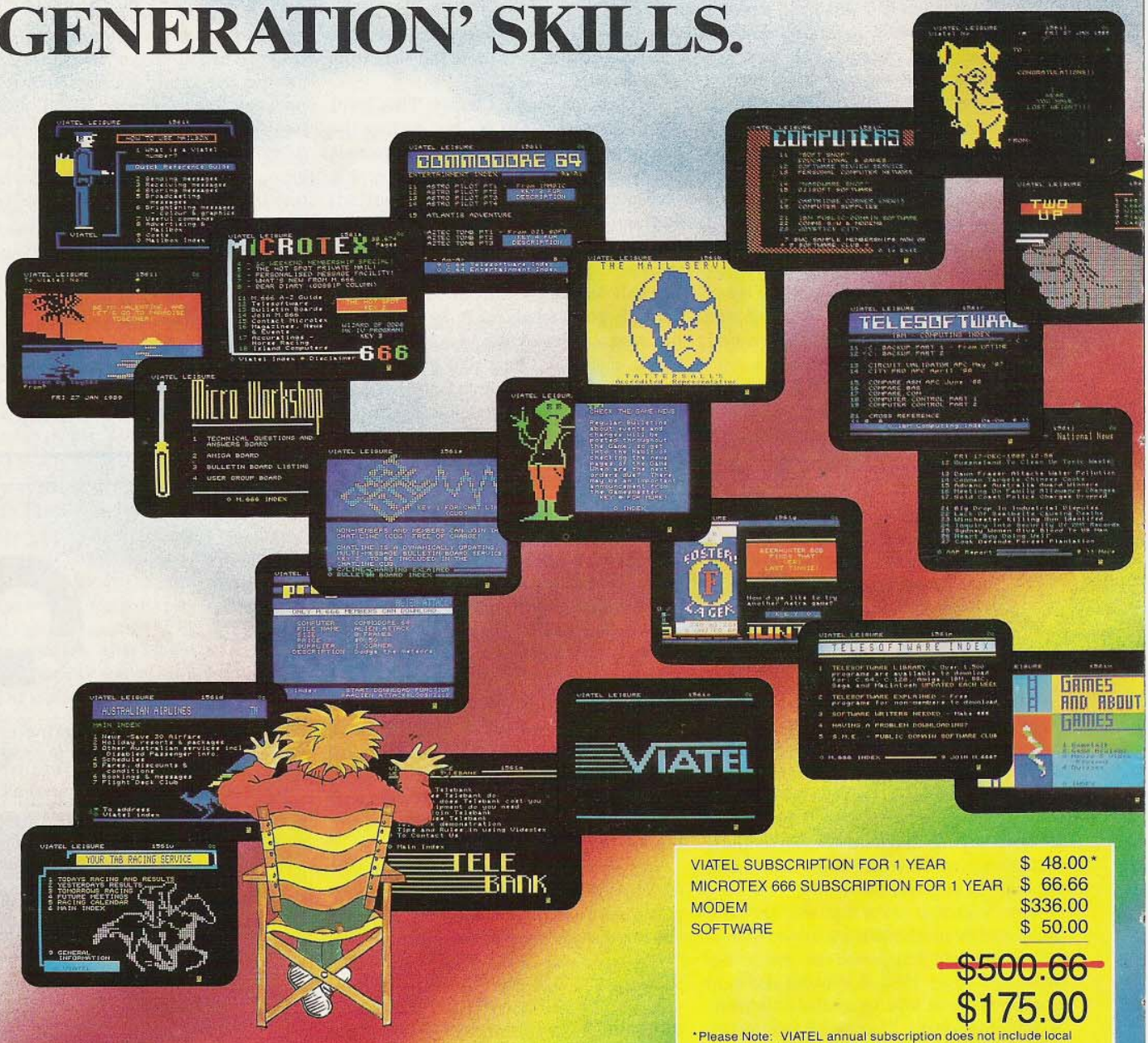
Rock Challenge has well developed graphics and music which makes it worthwhile buying this game even if you only have a very small interest in the music world. ❑



AMIGA

Our review copy came
from Questor (02) 662 7944
RRP $59.95 Amiga only

FOR ONLY $175 LET YOUR COM WORLD OF COMMUNICA GENERATION' SKILLS.



VIATEL SUBSCRIPTION FOR 1 YEAR	$ 48.00*
MICROTEX 666 SUBSCRIPTION FOR 1 YEAR	$ 66.66
MODEM	$336.00
SOFTWARE	$ 50.00
	~~$500.66~~
	$175.00

*Please Note: VIATEL annual subscription does not include local call fees to connect to VIATEL (21¢ from anywhere in Australia), connect time charges or any frame charges you may incur.

IT'S ENOUGH TO BLOW THE MIND OF ANY COMPUTER ENTHUSIAST!

The AVTEK EXPLORER package contains a modem for the IBM PC and Compatibles or Commodore 64 and Commodore 128, Communications Software, VIATEL and Microtex 666 subscription for one year.

IPUTER OPEN UP THE EXCITING ATIONS AND ESSENTIAL 'NEXT

ALL THIS FOR $175

the latest news on the computer industry, as well as advice from the experts. Microtex 666 also offers you entertainment, bargain shopping and a wealth of other services.

MODEM

AVTEK 3+12 MODEM FOR THE IBM PC AND COMPATIBLES

OR

A MODEM FOR THE COMMODORE 64 AND 128

These modems offer 1200/75 bps suitable for VIATEL and similar services, etc., and have telesoftware download capability. PLUS 300 bps full-duplex asynchronous communications to suit Electronic Mail, Bulletin Board Services, etc. Simple-to-use modems that are ideal for the first-time communicator.

COMMUNICATIONS SOFTWARE

The software has been designed to run on IBM PC XT, AT and the Commodore 64 and 128.

The AVTEK EXPLORER communications package we are offering gives you everything you need to access VIATEL and Microtex 666.

VIATEL SUBSCRIPTION FOR ONE YEAR

Imagine from the comfort of your own home, being able to bet on the races, bank, pay bills, shop, play games, book holidays, purchase lottery tickets, send electronic mail, meet a multitude of people and much more! Well it's all possible through VIATEL. VIATEL, Telecom Australia's national videotex service is available to anybody with a telephone connection, a computer and a modem. The modem will simply and quickly connect your computer to the telephone line.
VIATEL is simple to use and requires no special knowledge of computers or related terminology.

MICROTEX 666 SUBSCRIPTION FOR ONE YEAR

Computer Publications Pty Ltd's popular Microtex 666 (to be found only on VIATEL), offers a comprehensive service for PC users. Microtex 666 connects you and your computer to a nation-wide network of thousands of computer users. Microtex 666 lets you communicate with these users AND gives you MASSES of computer programs straight down the telephone line onto your PC.
You can "download" software as often as you wish, any time of the day or night. Become an identity on the Microtex 666 bulletin boards, get

AVTEK DATA COMMUNICATIONS
(A Member of the NetComm Group of Companies)
MICROTEX 666
Telecom VIATEL AUSTRALIA'S NATIONAL VIDEOTEX SERVICE

ORDER NOW

Please note your AVTEK EXPLORER package will include modem, connecting cables, software, Microtex 666 membership card, VIATEL membership. Sales tax and postage and handling is included in price.

TO ORDER:

Call credit card details through to AVTEK Data Communications on 008 252 754 for same-day dispatch.

OR

Simply fill out the coupon below and send it to:

AVTEK Data Communications
Freepost 16
PO Box 651
Lane Cove, NSW 2066

My choice of modem is: (please tick)

☐ Modem 3 + 12 for IBM PCs & Compatibles ☐ Auto Dial Modem for Commodore 64 & 128 PCs

I currently have a: (please tick)

☐ IBM PC/XT/Compatible (25 pin D25 female connector) ☐ IBM/AT/Compatible & require a 9 pin connector

☐ Commodore 64/128 (Commodore interface)

PLEASE PRINT CLEARLY IN BLOCK LETTERS
DELIVER TO: (No P.O. Box numbers, please)

NAME

ADDRESS

POST CODE

REGISTERED TELEPHONE NUMBER

CHARGE MY CREDIT CARD ACCOUNT OR PHONE THROUGH TO (008) 252 754

☐ BANKCARD ☐ VISA ☐ MASTERCARD

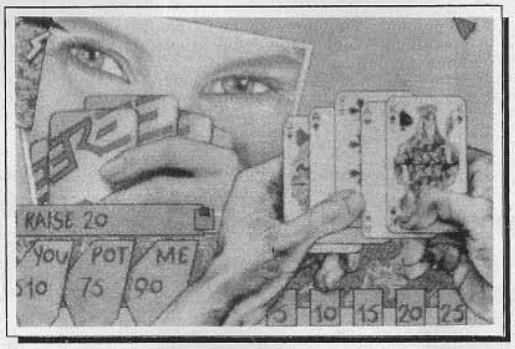
ACCOUNT NAME

CARD NUMBER EXPIRY DATE

SIGNATURE

Teenage Queen

by Richard Silsby



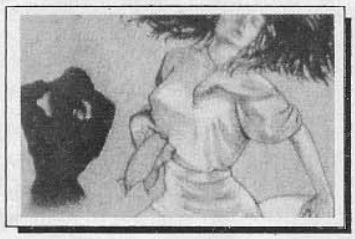
Here at ACR, we try to remain sensitive to programs unsuitable for family consumption. *Teenage Queen* contains pictures which could be described as provocative. They do not involve nudity - thus the game is a semi-tame version of some earlier entries to the strip poker fray.

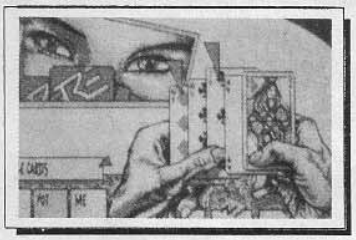
The graphics are exceptionally well drawn - so we thought the program deserved a mention. The French maid plays a fairly good game - although at times somewhat predictable.

Digitized giggles and card shuffling fill the empty spaces between hands. The overall presentation represents a departure from standard layout - a good change further enhancing the reputation of artist Jocelyn Valais.

The screen shows the lady-of-the-screen in the middle. To the right are your cards held by a pair of magnificently drawn hands. Below that are your options, and to the left of those are your bank balance, pot and your adversary's bank. The options allow you to STAY, BET, RAISE, CALL, DROP, CHIPS.

The game operates the same way that it would on Friday night at the boys poker night. Worth a look - and if you can spare an hour or two - this is a tough game of tactics and memory. ❑





AMIGA

Our review copy came from OziSoft (02) 211 1266
RRP $52.95 Amiga

DISKETTES

100% ERROR FREE
LIFETIME GUARANTEE
Pkt. 10 - Credit Cards Welcome

51/4 DSDD 360K	$5.99	31/2 DSDD 720K	$19.25
51/4 DSHD 1.2 MB	$17.88	31/2 DSHD 11.44K	$49.90

$PECIAL$ SAVE, EC - 452 Dual Serial & Centronics for 16MHz $89,
EC-CGMA 640x400 CGA+CGA HGA $179, AT 12MHz system $1499,
AT 4000 Motherboard 12MHz 4Mb sockets ok 2x6/6x16 axis $596
KEN CURRY Managing Director

Prices include tax - Plus P&P

26 Boron St, Sumner Pk, Brisbane
Qld 4074. Phone: (07) 376 2955.
Fax: (07) 376 3286.
WELLINGTON, NZ:
Ph: (04) 85 8742. Fax: (04) 82 8850.

energy CONTROL

COMPUTER DISCOUNTS (AUST) PTY LTD

Tel (02) 436 2600
Fax (02) 437 4919
178 PACIFIC HIGHWAY, ST LEONARDS 2065. PO Box 1437, CROWS NEST 2065

M.A.S.T. PRODUCTS
MEMORY AND STORAGE TECHNOLOGY

PERFORMANCE PLUS DRIVES
FEATURE QUALITY FUJITSU MECHANISM
45 meg $1295
90 meg $1695
135 meg $2095

TINY TIGER™
BUDGET 30 meg $999
BUDGET 50 meg $1295
180 meg $2395

FIREBALL™
DRIVE ON A CARD FOR AMIGA 2000

BUDGET:	
30 meg	$945
50 meg	$1245
PERFORMANCE PLUS:	
45 meg	$1245
90 meg	$1645
135 meg	$2045
180 meg	$2345

UNIDRIVE
~~239~~ $219

TWINDRIVE
$398

INTERNAL FLOPPY A2000 $199

MINIMEGS™
for A500 & A1000

512K	$531
1 meg	$763
2 meg	$1227

MASTerprint
300 dpi PAGE PRINTER
$3395

MASTerprint PS
300 dpi POSTSCRIPT PAGE PRINTER
$6495

MICROMEGS™ - $249 - ALTERNATIVE TO A501™ -
- small aize
- low power

M.A.S.T.

3.5" DISKETTES
$18.50 pack of 10
WE IMPORT THESE DISKS DIRECTLY FROM JAPAN - SO WE KNOW THEIR SOURCE : QUALITY TO COUNT ON

3.5" H.D. DISKETTES
$55 per 10

PUBLIC DOMAIN $4.50
LARGE COLLECTION:
FISH 1-194 T-BAG 1-17
AMICUS 1-26 FAUG 1-76
INCLUDE $5 P & P

DIGIVIEW GOLD $279

AC BASIC COMPILER $239

AC FORTRAN $339

LATTICE C V.50 $379

DOSLAB FROM JUMPDISK
DISK BASED INTERACTIVE CLI TUTOR - V 1.3 WB
GREAT VALUE!!
$29.95

AMIGA COMPANION
Published by AMIGA WORLD
$36

JUMPDISK $19.50
THE ORIGINAL AMIGA MAGAZINE ON A DISK - 3 YEARS OLD IN JULY
- NEWS
- PROGRAMS
- PUBLISHED MONTHLY

SUBSCRIBE $ SAVE
3 months $45
6 months $83
12 months $159
BACK ISSUES $15 ea

US AMIGA MAGAZINES -
HOT OFF THE PRESS - IMPORTED BY AIR
AMIGAWORLD $9
AMAZING COMPUTING $8.50
TRANSACTOR $8.50
MANY OTHERS AVAILABLE
SUBSCRIBE AND SAVE

SUPRA MODEM
300/1200/2400 Baud
NOW ONLY $299
FULLY HAYES COMPATIBLE
NOT TELECOM APPROVED

SOFTWARE
AT OR BELOW US RETAIL ON MANY ITEMS.
SEND $5 FOR CATALOGUE - INCLUDES DISCOUNT COUPONS

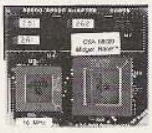
A-MAX™
MAC EMULATOR
$259

MACINTOSH™ COMPATIBLE FLOPPY DRIVE
NEEDED WITH A-MAX
$299

NEW PRODUCT11

EASYL
GRAPHICS TABLET
$699

MIDGET RACER CSA



HOT NEW ACCELERATOR FOR ALL AMIGAS $ CALL
- 68020 processor
- Optional math co-processor up to 33 Mhz 688821
- 50% average speed increase without math co-processor

ALSO: Sculpt Animate $D $639

NEW! SCULPT-ANIMATE 4D - JNR $199

3D X-SPECS (HARDWARE)
$179

MOUSE PAD
$17

ACTIONWARE PHASER GUN
$69.95

DIGIPAINT 3
$99

SUPERBASE PROFESSIONAL V3.0
$399

Boing! Mouse
Professional Optical 3-button mouse for your Amiga. Available EXCLUSIVELY at Creative Computers!

The first and only Optical Mouse for the Amiga – This mouse is definitely the best mouse you can buy for your Amiga.

- Optical technology eliminates friction and momentum coefficients for super-precise handling.
- No moving parts for increased reliability.
- Middle button makes it the only mouse compatible with A2024 software and X Windows.
- Compatible with ALL Amiga computers. $199

PAGESTREAM
S249

LATTICE C++ $599

Make Your Disks Fly with..... **$49.95**

B.A.D.

The Ultimate Disk Optimizer
Decrease Disk Access Time Up To 500%
Restore Smooth Disk Operation
Designed For Use On Floppies AND HardDrives

Supports Multiple Partitions
FAST CLI Directory Access
Incredible Workbench(tm) Performance
100% AmigaDOS Compatible

B.A.D. analyzes, restructures, and processes ANY AmigaDOS disk such that permanent speed increases will be realized. This is NOT a RAM cashe based system!

$49.95

Mypaint™
Educational Paint Program & Coloring Book

WORLD ATLAS $69.95

OSWALD
strategy game with a cold hungry bear
$39.95

F-16 FALCON $54.95

SEX VIXENS FROM SPACE
$49

ICON PAINT
$49
Display Workbench icons in 16 colours. Includes icon paint-program.

BOOKS GALORE CALL!

MAIL ORDER CALL FOR FREIGHT. ALL PRICES SUBJECT TO CHANGE - NO NOTICE

MAC AND MACINTOSH ARE TRADEMARKS OF APPLE COMPUTERS. ALL TRADEMARKS ARE PROPERTY OF THEIR RESPECTIVE CORPORATIONS.

Championship Cricket

by Richard Silsby

At last there is a game that all the Australian Norms can get interested in. The noble game of cricket is now available to be played on computer, so all those gentlemen who always wanted to play the game at a high level - here's your chance!

The only disappointing thing is that when you load up the game you find that you are not a player, but rather you have been appointed as coach of a county side. You are given the choice of becoming the coach of any of the county sides you like. Your job is to coach your side through the four competitions. There is a County Championship, which is a two innings game over three days. Then Sunday League, which is a 40-over match. Followed by two knockout cups, which are played over 55 and 60 overs.

Now you have your county side, it's time to select your team of players for the first game. You have a squad of 16 players - two wicket keepers, four all rounders, five batsman and five bowlers. Each player has a rating beside his name to aid you in choosing your best players.

Having selected your team, it's time to go to the ground and play the game. But you must decide whether to play a fast game or slow game. A fast game will result in the scores appearing instantly on the screen. To play the match slowly is the same as playing the match fast, except that you see the game unfold before your very eyes. Also you are given the choice of selecting the order of your bowlers.

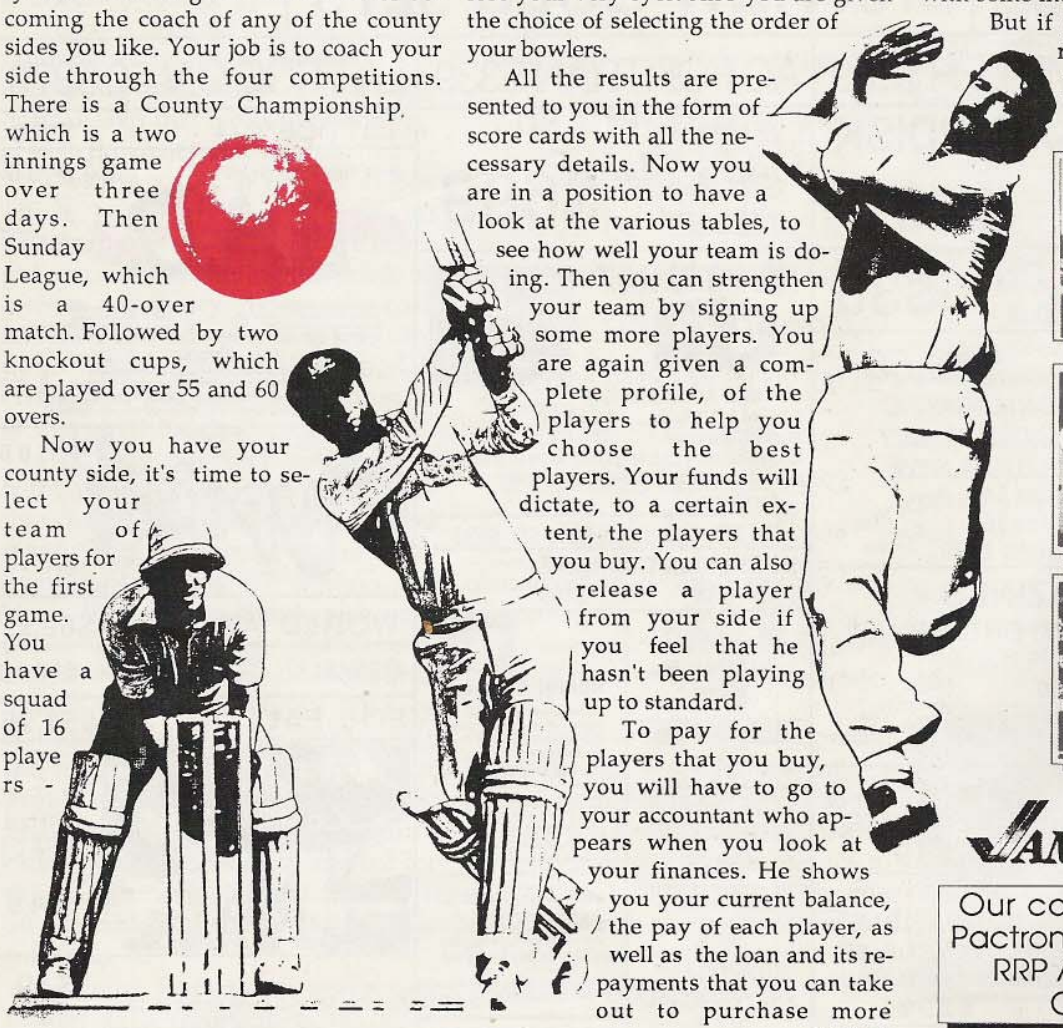
All the results are presented to you in the form of score cards with all the necessary details. Now you are in a position to have a look at the various tables, to see how well your team is doing. Then you can strengthen your team by signing up some more players. You are again given a complete profile, of the players to help you choose the best players. Your funds will dictate, to a certain extent, the players that you buy. You can also release a player from your side if you feel that he hasn't been playing up to standard.

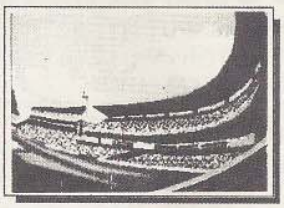
To pay for the players that you buy, you will have to go to your accountant who appears when you look at your finances. He shows you your current balance, the pay of each player, as well as the loan and its repayments that you can take out to purchase more players.

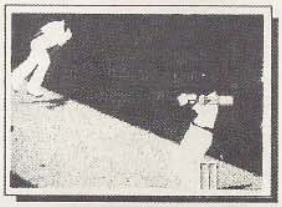
Finally you can see the averages of your players. This will help you decide whether to get rid of some players and also whether to buy new players. There is also the option to go to the career record of your performance in the seasons that you had been the county coach.

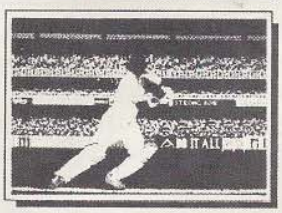
All in all, I am sorry to say that I fell asleep while playing this game, because the only excitement that Crysys laboratories have put in is some well designed pictures of various cricket screens along with some interesting sound effects.

But if you like cricket and enjoy relaxing, this is the game for you. ❑









AMIGA

Our copy came from
Pactronics (02) 407 0261
RRP Amiga $39.95
C64 $29.95

One Good Book deserves Another and Another, and A...

New

Amiga C for Beginners

An introduction to learning the popular C language. Explains the language elements using examples specifically geared to the Amiga. Describes C library Routines, how the computer works and more. **$49.95**

Also coming soon: **Amiga C for Advanced Programmers**

Amiga Disk Drives-inside & Out

- is the most in-depth reference available covering the Amiga's disk drives. Learn how to speed up data transfer, how copy protection works, computer Viruses, Workbench and the CLIDOS functions, loading, saving, sequential, and random file organization, more. **$49.9**

Best Seller

Amiga BASIC inside & Out

- the definitive step-by-step guide to programming the Amiga in BASIC. Every AmigaBASIC command is fully described and detailed. Topics include charts, windows, pull down menus, files, mouse and speech commands. **$49.95**

Includes Workbench 1.3

Amiga DOS Inside & Out

- covers the insides of AmigaDOS from the internal design up to practical applications. Incudes detailed reference section, tasks and handling, DOS editors ED and EDIT, how to create and use batch files, multitasking and much more. Includes Workbench 1.3 **$49.95**

Amiga System Programmers Guide

- comprehensive guide to what goes on inside the Amiga in a single volume. Only a few of the many subjects covered include the EXEC structure, I/O requests, interrupts and resource managment, multitasking functions and much, much more..**$69.95**

New

More Tricks and Tips for the Amiga

- is a collection of valuable programming hints and techniques for all Amiga users. It covers using the new Amiga DOS, Workbench and Preferences 1.3, disabling FAST RAM and extra drives, virus checkers and more.

New

Computer Viruses:

- describes what computer virus is, how do viruses work, viruses and batch files, protecting your computer and designing virus proof systems and more. **$49.95**

Amiga 3D Graphics Programming in Basic

-shows how to use the powerful graphics capabilities of the Amiga. Details the techniques and algorithms for writing three-dimensional graphics programs: ray tracing in all resolutions, light sources and shading, saving graphics in IFF format and more. **$49.95**

New Release

Amiga For Beginners

- the first volume in our Amiga series, introduces you to intuition (Amiga's graphic interface), the mouse, windows, the CLI, and Amiga BASIC and explains every practical aspect of the Amiga in plain English. **$39.95**

Includes Workbench 1.3

Best Seller

Amiga Tricks and Tips

- follows our tradition of other Tricks and Tips books for CBM users. Presents dozens of tips on accessing libraries from BASIC, custom characters sets, AmigaDOS, sound, important 68000 memory locations, and much more!! **$49.95**

Amiga Machine Language

- is a comprehensive introduction to 68000 assembler machine language programming and is THE practical guide for learning to program the Amiga in ultra fast ML. Also covers 68000 microprocessor address modes and architecture, speech and sound from ML and much more. **$49.95**

New & Handy

AmigaDOS Quick Reference Guide

- an easy-to-use reference tool for beginners and advanced programmers alike. you can quickly find commands for Amiga by using the three handy indexes designed with the user in mind. All commands are in alphabetical order for easy reference. Includes Workbench 1.3 **$19.95**

PC Manuals and Reference Guides

Pactronics also have a wide range of PC software Manuals and Reference Guides to suite most popular software, for all levels of users.

- The PC for Beginners range covers the following titles;

MS DOS for Beginners, GW BASIC for Beginners, Microsoft Works for Beginners, Ventura Publisher for Beginners, Unix-Xenix for Beginners. More titles are being added every month.

- The Program Reference Guides cover the following;

MS DOS Reference Guide, GW BASIC Reference Guide, 1-2-3 Reference Guide, dBase III (PLUS) Reference Guide, Microsoft Word Reference Guide,Wordperfect Reference Guide.

Pactronics

Available from all major book shops(Angus & Robertson, Dymocks, etc) and your local computer store (Grace Bros, Myer, Micro-Computerspot, etc)

N.S.W. : Pactronics Pty Ltd, 33-35 Alleyne Street, Chatswood. (02) 407 0261
VICTORIA : Pactronics Pty Ltd, 51-55 Johnston Street, Fitzroy. (03) 419 4644
QUEENSLAND : Pactronics Pty Ltd, 12 Stratton St, Newstead, 4006. (07) 854 1982
SOUTH AUSTRALIA: Baringa Pty Ltd, (08) 271 1066 ext. 6132
WESTERN AUSTRALIA: Pactronics, unit 13, 133 High Rd Willeton 6155. (09) 354 1122

MicroComputer Spot

MAIL ORDER

Front 13 Gibbes Street,
East Chatswood, NSW 2067
Phone: 417 7395
TOLL FREE (008) 25 2130

Call to check latest prices

AMIGA HARDWARE

AMIGA 500 & 1084S
$1298.00

Actionware light phaser gun	$49.95
Amiga 500 Pack, includes Amiga 500, Textcraft + Word Processor	$899
Megapack, A500 1 meg ram textcraft	$1299
Stereo, T/table dual cass, tuner	$299
Amiga 500 ½ megabyte RAM	$299
1084S Monitor, full colour, stereo sound	$499
Philips Stereo Monitor (2 year warr.)	$499
Amiga Modulator, connect A500 to TV	$59.95
Pocket Modem, connects to A500 for 300, 1200/75 and 1200 communication	$349
1010 Disk Drive, second drive for A500 and A1000	$249
California Access CA880 Disk Drive	$279
Perfect Sound II for A500/A2000 sound digitising	$259.95
Perfect Sound for A1000	$199.95
Time Saver Keyboard Macros for A1000	$149.95
Audio Digitiser	$99.00

AMIGA 2000
$2999

HARD DRIVES
20 meg + Controller $1099
42 meg + Controller $1499
84 meg + Controller $1995
SCSI Interface, included
DMA. voice coil

Accelerator processor, increase Amiga to 14 MHz	**$399**
Amiga 2000	**Call**
Amiga 2000 Pack	$4995
Amiga 2000 with colour monitor	Call
A2000 PC-XT Emulation (bridgeboard) with 512K RAM, 5¼" Drive + MSDOS	$999
AT Bridgeboard inc. 1 meg	$1995
A2000 Hard Drive Controller	$399
A2000 8 Meg Board with 2 Meg installed	$1299
A2000 Internal 3.5" Drive	$299
PC Hard Card 33 Meg H/D + Controller	$799
Flicker Fix Card Flicker Free Hi Res Card	$995
Genlock, A8802 from Rendale	$899
Quinto professional genlock	$2995
Midi Interface A2000/A500	$149.95
Digiview Gold Software + Filter	$399
Digiview Gold with AWA Camera + lens	$999
Trump card SCSI H/D controller	$399
Hard drive 40 meg inc. controller	$1399
Perfect Vision, video frame grabber	$599
EasyIGraphics Tablet A2000	$799

ATARI ST

Advantage Pack, 1st word W/T Neo-chrome + 5 games	$99
520ST FM Computer with 512K	Call
1040ST FM Computer with 1 Meg RAM	Call
Mega ST2 Computer with 2 Meg RAM	$2495
Mega ST4 Computer with 4 Meg RAM	$3495
Mega File 20 Hard Drive	$1295
Mono Monitor SM124	$399
Colour Monitor SC1224	$649
SF Disk Drive	$449

ATARI
520 ST + 1040 ST
TOO LOW TO PRINT!

COMMODORE 64/128

Commodore C64C	$249
1541C Disk Drive	$349
Compatible Drive	$299
C64 Datasette	$59.95
1802 Monitor	$399
Family Pack (C64, 5 programs, 1 joystick)	$299
Propak C64 + 1541, Geos + Games	$599
128D, with built in disk drive	$499
1351 Mouse for 64/128	$89.95
Magic Mouse	$59.95
Netcomm 64/128 Modem 1200/75 and 300 baud communications	$229
Xetec Interfaces CBM serial to centronics; Junior	$129
Senior, with 8K buffer	$199
Gold, with 32K buffer	$279
64 Power Supply	$49.95
Freeze Machine back up cartridge	$129.95
Final Cartridge III	$139.95

COMMODORE PC's

PC 10 Series III, single drive	$1399
PC 10 Series III + 33 M H/D	$1995
PC Colt, dual drive, 640K RAM	$1199
TTL green hi-res Monitor	$199
1084S Colour Monitor	$499
Thomson Autoscan hi-res rolour	$1199
Thomson EGA hi-res card	$399
Joystick cards for PC	$44.95
Joystick for PC	from $49.95
Witty Mouse	$89.95
DMS Mouse Kit, with mat + software	$149.95
JT Fax, turns your PC into send and receive fax machine	$899
Handi Scanner, copies pictures onto your PC screen	$499

ATARI PC
★ 640K RAM
★ 8 MHz Clock
★ EGA, CGA, Mono
★ Dual Floppy
★ Mouse + Paint
★ Heaps of software
★ MS DOS + GEM
(Monitor Extra)
$1499

EPSON PCe CRAZY
2 x Floppy Drives
640K
Mono Monitor
$1995

3.5" DISKS $24.95
Memorex (10)

PRINTERS

Commodore

MPS 1250 for 64/128 and centronics	$399
MCS 810 colour for 64/128	$449
MCS 820 colour for Amiga	$449
MPS 1280, 15" width, 9 pin	$599
MPS 2020 fast 10" width – colour	$999
LP806 Laser	$3699

Epson

LX800 – text and graphics	$429
LQ500 budget 24 pin quality	$699
EX800 superfast 9 pin, colour option	$999
LQ850 fast 24 pin	$1199
FX1050 fast 15" 9 pin	$1199
EX1000 super fast 15", colour option	$1299
LQ1050 fast 15" 24 pin	$1499
LQ2500 top of the line 24 pin, 15" with colour option	$1995
GQ3500 laser	$3195
Colour options for EX800/1000 or LQ2500	$139.95
Epson serial port cards from	$79.95

Star

NX1000 9 pin – Multiple Fonts	$499.00
NX1000CL 9 pin colour	$599.00
NX24-10 24 pin quality	$699.00

Ribbons

Epson GX, LX80, LX86	$14.95
LX800, FX800, FX850, RX800	$17.95
LQ500, LQ800, LQ850	$19.95
LQ1000, LQ1050	$29.95
EX800/1000 black	$24.95
EX800/1000	$34.95
Commodore 801, 802, 803, 1101, 1200, 1250	$14.95
Star etc., NX1000 black	$14.95
NX1000 colour	$29.95
NX24	$19.95
Citizen 120D	$19.95
Olympia NP30	$14.95

PERIPHERALS

Biztel 2400 Baud Modem	$499
BitBlitzer modem, 1200, 300, RS232C, Auto	$399
Citizen 120D printer for 64/128	$399
Olympia NP30 printer for 64/128	$399
Citizen 120D centronics or 64/128 interface	$89.95
C16/plus 4 joystick	$19.95
Wico 3 way joystick	$74.95
Wico Bat Handle joystick	$59.95
Wico Redball joystick	$59.95
Wico Trackball	$39.95
Tac 2 joystick	$49.95
Quickshot II joystick	$24.95
Quickshot II Turbo joystick	$49.95
Cruiser joystick	$49.95
Quickshot 113 (PC) joystick	$49.95
Netcomm Pocket Modem A500	$349
Avtek 2400 baud, 1200, 800 etc.	$499
Avtek Mega Modem 123E 300, 1200; 1200/75	$499
RS232C cables, IBM and Amiga	$39.95
Centronics cables, IBM and Amiga	$39.95
CBM serial cables 64/128	$19.95
C64/128 TV cable	$14.95
Star Cursor joystick (3 yr warranty)	$49.95

ACTIONWARE GUN
SUIT AMIGA
$49.95

Seagate 33 M H/D and Controller	$599
Hardcard 33M for IBM	$799
Monitor Stand, tilt and swivel	$39.95
Printer Stand with paper tamer	$39.95
Computer Desk 1200, black, grey, beige	$199.00
Computer Desk 1300, black, grey, beige	$279.00
Computer Desk 795, black, grey, beige	$149.00
Mouse Mats (big)	$19.95
Acco Computer Desk	$199.00

BOOKS

Amiga Intuition Ref. Manual	$49.95
Amiga ROM Kernal Ref. Manual	$89.95
Amiga ROM Kernal Exec. Ref. Manual	$49.95
Amiga Hardware Ref. Manual	$49.95
Computer Animation	$49.95
Mastering Amiga Dos	$39.95
Inside Amiga Graphics	$39.95
C64 Programmers Ref. Guide	$44.95
C128 Programmers Ref. Guide	$59.95
Jumpdisk – Magazine on Disk	$19.95
Megadisk – Magazine on Disk	$19.95
Kings Quest I, II, III Hint Books	$19.95 ea.
Leisure Suit Larry Hint Book	$19.95
Space Quest Hint Book	$19.95
Bard's Tale I, II, III Hint Books	$29.95 ea.

STATIONERY

5¼" (10) Disks Memorex	$14.95
5¼" No Frills (10)	$9.95
3½" Memorex (10)	$24.95
No Frills 3½" (10)	$19.95
5¼" Disk Storage Box (100)	$24.95
3½" Disk Storage Box (40)	$19.95
3½" Disk Storage Box (80)	$24.95
Rediform A4 900 sheet carry pack	$39.95
Rediform Quarto 900 sheet carry pack	$44.95

MicroComputer Spot

Phone: 417 7395. Front 13 Gibbes Street, East Chatswood, NSW 2067

TOLL FREE (008) 25 2130

MAIL ORDER

AGC CREDIT LINE NOW AVAILABLE

2400 BAUD MODEMS $399

AMIGA ACCELERATOR $399.00 14 MHz

AMIGA SOFTWARE

4th & Inches	Gridiron Sim	$54.95
4th & Inches Team Const	Make your own	$39.95
AC Basic	Basic Compiler	$419.95
Action Service	Shoot 'em up	$54.95
Advanced Midi Sampler	Latest midi!	$249.95
Aegis Draw 2000	CAD package	$419.95
Afterburner	Another arcade conversion fast & hard	$54.95
Amiga Basic In & Out Disk	A must for those reading the book	$29.95
Amiga C for Beginners Disk	Time saving dsk to match book fr Abacus	$29.95
Amiga Disk Drives In/Out D	Helpful dsk save time suits Abacus book	$29.95
Amiga Enhancer Pack	1.3 DOS	$34.95
Amiga Talk	Viatel package (for modems)	$109.95
Amiga Term	Cheap comm's	$29.95
Animate 3D	Ray-traced animator	$284.95
Arexx	Programming language	$89.95
Audio Master 2	Improved Sampler	$164.95
Award Maker Plus	Print your own awards	$89.95
B.E.S.T. Accounting	Full accounting	$569.95
B.E.S.T. Accounting Mini	Cut down version	$339.95
Baal	Another brilliant arcade from Psynosis	$69.95
Balance of Power	Political world strategy	$79.95
Balance of Power 1990	Improved game on old version	$79.95
Bards Tale	Animated adventure	$54.95
Bards Tale 2	Continued	$54.95
Battle Chess	3D animated chess	$74.95
Battletech	A must for any board game player	$69.95
Becker Text	Graphic wordprocessor	$299.95
Beyond Ice Palace	Ghosts & Goblins	$54.95
California Games	Wish there could all be California Games	$74.95
Capone	Great light gun shoot 'm up	$49.95
Captain Blood	Animated space adventure	$79.95
Carrier Command	The ultimate 3D simulation!	$74.95
Championship Cricket	At last a cricket simulator	$49.95
Chessmaster 2000	Best quality 3D chess ever	$54.95
Chicken Little	Learn to read educational	$44.95
Comic Setter	Make/design your own comic strips	$104.95
Corruption	New magnetic scrolls adventure	$69.95
Crash Garret	Unique 3D adventure	$74.95
Crazy Cars 2	Big improvement on the first	$69.95
Critics Choice	Kind words, maxiplan, MF filter	$399.95
Dalley Thompsons O.C.	10 sports games	$74.95
Data Retrieve	Quality data base system	$179.95
Data Retrieve Professional	Now programmable	$359.95
Decimal Dungeon	Educational junior high 5th	$54.95
Defcon 5	SDI simulator	$74.95
Defender of Crown	Classic old England	$79.95
Deluxe Music Construc. Set	Composition editor	$59.95
Deluxe Paint 2	Top art package	$244.95
Deluxe Paint Art & Utility	Extra for D Paint	$44.95
Deluxe Paint Help	Great tutoring package	$69.95
De Luxe Paint III	D Paint gets better 'n' better	$299.00
Deluxe Photo Lab	Ham image processing	$244.95
Deluxe Print 2	Posters and banners	$189.95
Deluxe Print Art Disk 2	More art pieces D Print	$54.95
Deluxe Video	Design and run video productions	$189.95
Denaris	Looking for fast action arcade get this	$59.95
Devpac	Latest compiler for assem	$149.95
Digi Paint	Professional H.A.M. paintbox!	$134.95
Digiview Gold	Latest to the range of Newtek digi packs	$389.95
Director	Ultimate scriptbased controller	$129.95
Discovery Spelling	Spelling game arcade	$59.95
Disk Mechanic	Speed up your disks	$169.95
Distant Armies	History of chess pieces/games	$69.95
Double Dragon	The arcade hit	$59.95
Dragons Lair	The arcade comes home, really!!!	$99.95
Dr T Keyboard Control Seq	For the music production people	$414.95
Dr T Midi Recording	$Best midi sequencer	$104.95
Dungeon Master	D & D for Amiga	$64.95
Electronic Cash Book	Accounts	$209.95
Elite	A must have for any collect...flt/strat	$49.95
Emerald Mine 2	It just gets better and better	$59.95
Empire	Superb strategy	$54.95
Empire Strikes Back	Follow up to Star Wars	$54.95
Excellence	Scribble III? Top word pro	$499.95
F16 Falcon	Brilliant flight sim. 16 missions	$79.95
FA18 Interceptor	Amiga's No. 1 program	$49.95
FACC 2	Floppy cache system	$69.95
Faery Tale	Animated fantasy	$69.95
Fantavision	Animate your art	$114.95
Ferrari Formula 1	Action action action	$54.95
Fine Print	Improve your printer output	$74.95
Fire Brigade	Latest for the strategy buffs	$59.95
First Shapes	Best young education seen!	$54.95
Fleet Check	Real time spell checker	$59.95
Flight Simulator 2	Classic instrument flying	$114.95
Flintstones	Great arcade fun	$84.95
Flippit	Rubik's cube	$39.95
Flipside	Turn that spreadsheet sideways	$64.95
Forms in Flight 2	3D modelling	$199.95
Fortran 77	Programming language	$214.95
Fraction Action	Educational 5th grade & up	$84.95
Garrison 2	Gauntlet style	$84.95
Gnome Ranger	Graphic adventure game	$39.95
Gold Rush	Another graphic adventure from Sierra	$69.95
Gold Spell	80,000 word spelling checker	$54.95
Gomf & Hardware	Latest Gomf version includes button	$134.95
Gone Fishin'	Hook a bass trout	$64.95
GPTerm	Comm's with Viatel	$104.95
Gunship	Full helicopter simulation	$79.95
Hollywood Poker	Strip your computer	$29.95
Home Builders Cad	Drawing package for home design	$349.95
Hostages	Try your skill as a marksman/commando	$74.95
Hunt for Red October	Submarine strategic warfare	$54.95
Hybris	New shoot 'em up	$74.95
Ikari Warrior	Combat	$54.95
Impossible Mission 2	Classic platform game	$54.95
Indiana Jones	Temple of Doom	$59.95
Intellitype	Typing tutor	$54.95
Interchange	Share sculpt 3D	$104.95
International Karate Plus	Great Karate simulator	$59.95
Into Eagles Nest	Arcade warfare	$59.95
Intro CAD	Super high quality printouts!	$144.95
Intro CAD parts	CAD bits and pieces	$54.95
Joan of Arc	Be guided thru with brilliant graphics	$4995
Jumpdisk	Many on a disk	$19.95
Kampfgruppe	Strategic tank warfare	$74.95
Kennedy Approach	Try your luck as air traffic controller	$64.95
Kid Talk	Quality educational software	$54.95
Kind Words	Quality wordpro/supports fonts	$169.95
Kinderama	Educational preschool age	$84.95
King of Chicago	Cinemaware classic	$84.95
Kings Quest 1	The start of a classic	$54.95
Kings Quest 2	The quest continues	$54.95
Kings Quest 3	And still	$54.95
Kristal	Hottest on the shelves since Elite	$74.95
Lattice C Compiler	The #1 'C' compiler	$374.95
Lattice C Development V5	Latest from Lattice inc. approx 300 libs.	$539.95
Leatherneck	Commando for Amiga	$74.95
Leisure Suit Larry	Adults only graphic adventure	$64.95
Lights Camera Action	Animation and Graphics	$144.95
Live & Let Die	James Bond on the loose	$49.95
Lombard Rally	Car rally racing	$69.95
Lost Worlds	Barbarian/Terropods	$64.95
Manhattan Dealers	Can you survive the traps	$64.95
Manhattan New York	Sierra for the older ones	$74.95
Marble Madness	Arcade quality game!!!	$64.95
Master Ninja	Kick your way thru many levels	$39.95
Mastertype	Typing tutor game	$79.95
Math Talk	Quality educational software	$54.95
Math Wizard	Maths fun	$84.95
Mavis Beacon Teaches Typ.	#1 typing tutor	$84.95
Maxiplan 500	Professional spreadsheet	$279.95
Maxiplan Plus	Top spreadsheet	$334.95
Mean 18	Golf and construction	$54.95
Mega Dos	All the info on 1.3 on a disk	$19.95
Menace	More latest shoot 'em ups	$74.95
Mercenary Compendium	That little extra for mercenary lovers	$59.95
Microfiche Filer Plus	Graphics based database	$289.95
Modular 2	The language	$259.95
Mortville Manor	Boring adventure	$59.95
Movie Setter	Create professional animation titles	$174.95
Murder on Atlantic	Oh hum	$74.95
Music Studio	Music maker with midi control	$79.95
Nimbus	Small business accounting pack	$269.95
Ninja Mission	Kung fu arcade action	$29.95
Off Shore Warrior	Boat blasting!!!	$64.95
Operation Clean Street	Action arcade	$64.95
Operation Wolf	Out of the arcade, into your room, action	$64.95
Outrun	Car action classic	$64.95
P.O.W.	Great with a gun	$49.95
Pacmania	Not space invaders	$54.95
Page Flipper Plus	Great for animations of IFF files	$269.95
Page Setter	Desk top publishing package	$169.95
Page Stream	D'top pub prints like laser on dot matrix	$299.95
Perfect Sound A500	Audio digitizing	$169.95
Phalanx 2	Wiz bang follow-on	$29.95
Phantasie	D & D role playing game	$74.95
Phantasie 3	The wrath of Nikademus	$54.95
Phaser	Home accounts	$134.95
Photon Paint	Superb graphics editing pack	$134.95
Photon Paint 2	For those how paint with ham	$229.95
Photon Video Cell	New animation tool	$249.95
Pioneer Plague	4096 colour blast	$69.95
Pixmate	Professional graphic editor	$129.95
Police Quest	Goodie, more Sierra's Coming	$69.95
President is Missing	Adventure game	$69.95
Printmaster	Banners and posters	$74.95
Printmaster fonts & borders	Art for Printmaster	$59.95
Printmaster Plus	Design and print signs, cards, etc.	$89.95
Prison	Good combination arcade/strategy	$49.95
Pro Sound Designer	Audio editor	$224.95
Pro Video	Video effects	$449.95
Pro Video Plus	Top video editor	$594.95
Professional Page	Best desk top publisher	$674.95
Prowrite	Wordpro with colour and graphics	$229.95
Quarterback	Hard drive back up tool	$129.95
Questron 2	Role playing	$54.95
R Type	Super fast arcade	$59.95
Rampage	Total destruction is the name of the game	$69.95
Raw Copy	Powerful copier	$149.95
Read and Rhyme	Educational 5 to 10 yr olds	$84.95
Read a Rama	Reading program	$84.95
Rebel Charge at Chick	More from SSI	$89.95
Return of Jedi	More from Star Wars	$54.95
Road Wars	Arcade action	$54.95
Roadwar 2000	New strategic game from SSI	$74.95
Rock Challenge	How well do you know Rock & Roll	$59.95
Rocket Ranger	Cinemaware classic	$79.95
Rockford	The Boulderdash classic game	$29.95
Roto Scope	Animation tool	$129.95
S.D.I.	Outer space animation	$84.95
Sargon Chess 3	Can beat Chessmaster 7 out of 9	$104.95
Scribble	Quality WP	$54.95
Sculpt 3D	Professional rendering pack	$209.95
Sculpt 3D Scenes & Objects	Save a lot of work	$29.95
Sex Vixens from Space	A hot little number	$64.95
Shakespeare	Colour desk top publishing	$389.95
Sidewinder	My favourite space shoot 'em up	$34.95
Silent Service	Fantastic 3D submarine sim	$59.95
Silicon Dreams	3 space adventures inc. graphics	$59.95
Sinbad & Throne of Falcon	Action adventure	$79.95
Sky Chase	Fly paper planes	$59.95
Skyfox	Shoot 'em up	$29.95
Skyfox 2	Shoot 'em down again!	$54.95
Softwood File	Database system	$179.95
Solitaire Royale	Cards for Amiga	$69.95
Sonix	Music editor	$169.95
Space Battle	Great arcade shoot 'em up!	$29.95
Space Harrier	More from the arcade collection	$69.95
Space Quest	3D arcade styled adventure	$79.95
Space Quest 2	Told you so!! Sierra (LSL II soon???)	$69.95
Space Ranger	Nice arcade space game!	$29.95
Speedball	Xenon lookalike	$74.95
Spellbound	Quality educational spelling	$74.95
Star Wars	Arcade game of the movie	$54.95
Starglider	Space arcade action	$69.95
Starglider 2	Similar to Elite	$74.95
Stargoose	Great scrolling	$49.95
Strike Force Harrier	Just a F16!	$74.95
Strip Poker 2	Prettier girls	$39.95
Sub Battle Simulator	Submarine simulator	$59.95
Summer Olympiad	Bunch of sports games	$59.95
Super 6	6 pack of Anco games	$59.95
Superback	Some should buy this (harddisk anyone)	$149.95
Superbase Personal	Filing system	$134.95
Superbase Personal 2	New improved version	$209.95
Superbase Professional	Fully programmable version	$524.95
Superbase Prof. Upgrade	Now includes multi-line trans V3.01	$89.95
Super Hang On	Better than going to Phillip Is. (m. bikes)	$54.95
Superman	Cartoon animated action	$69.95
Superplan	Spreadsheet for Superbase	$209.95
Swooper	Quality arcade space game	$39.95
Sword of Sodan	4 disks of pure violence	$74.95
Telegame	Modem games	$74.95
Terramex	Arcade adventure	$39.95
Test Drive	Great new car driving game	$59.95
Test Drive 2	Wow!!! Cars - tracks - driving at its best	$69.95
Test Drive 2 Cars	Bored with standard cars: get some more	$29.95
Test Drive 2 Scenery	Go somewhere different	$29.95
Tetra Quest	Mindblowing shoot 'em up	$74.95
Tetris	The first Soviet arcade	$49.95
Textpro	Another WP	$119.95
Thexder	Sierras latest adventure	$54.95
Three Stooges	Another Cinemaware classic	$94.95
Thunder Blade	Helicopter shoot 'em up	$64.95
Thunder Boy	Off the arcade	$64.95
Time & Magic	3 level 9 adventure games	$59.95
TR Texted	Jam packed great text editor	$44.95
True Basic	Programming language	$254.95
Turbo Cup + Car	Drive a Porsche	$79.95
Turbo Trax	Computerized slot car racing	$74.95
TV Show	Video text display	$194.95
TV Sports Football	Enjoy Gridiron ?? get this	$79.95
TV Text	Character generator software	$194.95
Twilight Zone	An adventure from Infocom	$69.95
UCSD Pascal	The industry standard	$194.95
Ultima 3	Better than 2	$109.95
Ultima 4	Even better than 3	$59.95
UMS	Battle sim. Battle of Waterloo inc.	$59.95
UMS Scenario Disk	More battles for UMS	$39.95
Vader	Pathetic arcade	$24.95
Vampire's Empire	Blood-thirsty arcade	$74.95
Veteran	For the mature Rambos	$44.95
Victory Road	More for Rambo type people	$54.95
Video Scape 3D	3D animation pack	$354.95
Videoscape 3D Design Disk	3D arts/parts disk, saves a lot of time	$64.95
Video Titler	Titler for videos?	$259.95
VIP Professional	Lotus 1-2-3 type package	$324.95
Vizawrite	Desktop wordpro' with fonts	$219.95
Volleyball Simulator	Table tennis	$54.95
War in Middle Earth	Brilliant! Adventure! Arcade! Strategy!	$89.95
Way of Little Dragon	Kung-fu action	$74.95
Wayne Gretzky Hockey	Brilliant!!! Hours and hours	$69.95
Whirligig	Space blowing action	$44.95
Who Framed Roger Rabbit	Arcade action from the movie	$64.95
Willow	The adventure comes to the computer	$59.95
Winners	Leader Board/Test Drive/...3 on a disk	$54.95
Winter Games	Winter sports simulation	$59.95
Winter Olympiad 88	Winter sports	$74.95
Wizard Warz	Arcade action	$74.95
Word Master	Spelling game for kids	$84.95
Word Perfect	The ultimate word processor	$699.95
Works	Scribble/analyse/organise	$379.95
Works Platinum	Improved word pro: S'sheet: D base	$399.95
World Class Leader Board	#1 Golf Game	$39.95
World Tour Golf	Equal #1 Golf Game	$54.95
X Cad Designer	Latest to the Cad range	$439.95
Zak McKracken	New adventure from Lucasfilms	$69.95
Zany Golf	Different to your standard leaderboard	$59.95
Zoom	Packman arcade	$74.95
Zynaps	Space shoot 'em up	$74.95

DELUXE PAINT III $299

128D COMPUTER & DISK DRIVE $499 Limited Stocks

MicroComputer Spot

Phone: 417 7395. Front 13 Gibbes Street, East Chatswood, NSW 2067

TOLL FREE (008) 25 2130

MAIL ORDER

AGC CREDIT LINE NOW AVAILABLE

STAR CURSOR JOYSTICK $49.95

C64/128 SOFTWARE

	Cass.	Disk
4th and Inches (S)		$9.95
10 Game Super Pack (AA)		$19.95
10 Great Games 2 (AA)	$19.95	$19.95
10 Great Games 3 (AA)	$39.95	$39.95
19 (SI)	$29.95	$39.95
720 Degrees (S)	$29.95	$39.95
Acrojet (SI)	$39.95	$39.95
Adult Poker (SI)		$29.95
Advanced Music Sy (H)		$109.95
Afterburner (AA)	$29.95	$39.95
Airborne Ranger (SI)	$49.95	$59.95
All Star (AA)		$39.95
Americas Cup Chal. (U)	$9.95	$29.95
Annals of Rome (SI)	$39.95	$39.95
Arcade Construction Kit (AA)		$54.95
Arcade Force Four (AA)	$39.95	$54.95
Arkanoid (AA)	$29.95	$39.95
Army Moves (SI)	$29.95	$34.95
Around World 80 D. (ED)	$29.95	$39.95
Artic Fox (U)		$39.95
Award Ware (BU)		$39.95
Barbarian (AA)		$39.95
Barbarian 2 Palace (AA)		$39.95
Bards Tale (AD)	$29.95	$39.95
Bards Tale 2 (AD)		$39.95
Bards Tale 3 (AD)		$39.95
Batman Caped Crus. (ST)	$29.95	$39.95
Battle for Norman. (SI)		$74.95
Battle Front (SI)		$54.95
Battle of Britain (SI)		$29.95
Beyond Ice Palace (AA)	$29.95	$39.95
Bionic Commandos (AA)	$29.95	$39.95
Blitz 128 (U)		$54.95
BMX Simulator (U)	$9.95	$14.95
Boulder Dash Cons. (AA)	$34.95	$34.95
Breakthrough (AA)	$29.95	$34.95
Bubble Ghost (AA)		$39.95
Bugblitz (AA)	$29.95	$39.95
Build a Book (ED)		$39.95
Calendars & Stati. (BU)		$24.95
California Games (S)	$24.95	$34.95
Captain Blood (AD)		$39.95
Card Sharks (SI)	$29.95	$39.95
Carriers at War (SI)		$54.95
Caveman (AA)		$39.95
Championship Lode Runner (AA)		$69.95
Charlie Browns AB. (ED)		$29.95
Check Book (BU)		$29.95
Chessmaster 2000 (SI)	$29.95	$39.95
Chuck Yeagers Fli. (U)	$29.95	$39.95
Circus Games (SI)		$39.95
Club House Sports (S)		$49.95
Colourme (ED)		$49.95
Combat Zone (AA)		$29.95
Concentration (SI)		$29.95
Conflict in Vietnam (SI)	$29.95	$39.95
Corruption (AD)		$49.95
Crossword Magic (SI)		$49.95
Cut & Paste (BU)		$29.95
Cybernoid 2 (AA)	$29.95	$39.95
Dalley Thompsons (S)	$29.95	$39.95
Dark Castle (AA)		$39.95
Dark Horn (AA)		$39.95
Data Manager 128 (B)		$99.95
Deathlord (AD)		$39.95
Decision in Deser. (SI)		$19.95
Defcon 5 (ST)		$59.95
Defender of Crown (SI)	$19.95	$54.95
Denaris (AA)		$39.95
Desolator (AA)	$29.95	$39.95
Destroyer (U)		$34.95
Double Dragon (AA)	$29.95	$44.95
Double Image 2 (A)		$54.95
Dragon Ninja (AA)		$39.95
Dragons Lair (AA)	$29.95	$39.95
Dragons Lair 2 (AA)	$29.95	$34.95
Druid (AA)	$29.95	$49.95
Dungeon Master En. (SI)		$54.95
Earth Orbit Stati. (SI)		$39.95
Elite (SI)	$49.95	$49.95
Empire (SI)	$29.95	$54.95
Empire Strikes Ba (AA)	$29.95	$39.95
Europe Ablaze (SI)		$54.95
F18 Hornet (U)		$39.95
Faery Tale (AD)		$69.95
Family Feud (SI)		$29.95
Fernandez Must Di. (AA)	$29.95	$39.95
Filer (BU)		$39.95

	Cass.	Disk
Final Assault (AA)		$34.95
Final Cartridge 3 (A)		$144.95
Financial Cookbook (BU)		$29.95
Fist & Throttle (AA)	$29.95	$29.95
Flight Simulator (U)		$104.95
Flight Simulator (U)		$54.95
Flippit (SI)		$24.95
Font 1 (BU)		$74.95
Fontmaster 128 (BU)		$94.95
Football Manager (SI)	$29.95	$39.95
Forrestland (AD)		$49.95
Fox Fights Back (AA)	$29.95	$39.95
Fury (AA)	$29.95	$39.95
Game Maker (A)		$49.95
Game Over 2 (AA)		$49.95
Games Summit Edit. (S)		$34.95
Games Winter Edit. (S)	$24.95	$34.95
Garfield (ED)		$69.95
Garfield Game (AA)	$29.95	$39.95
Gato (U)		$39.95
Gee Bee Air Rally (U)		$29.95
Geocalc (BU)		$94.95
Geocalc 128 (B)		$134.95
Geofile 128 (B)		$134.95
Geoprogrammer (A)		$124.95
Geopublish (BU)		$94.95
Geos (BU)		$104.95
Geos 128 (U)		$134.95
Geos 2 (BU)		$124.95
Geos Desk Pack (BU)		$59.95
Geospell (BU)		$59.95
Geowrite 128 (B)		$134.95
Gettysburg (SI)		$74.95
Ghost N Goblins (AA)		$19.95
Giants (AA)	$29.95	$29.95
Grand Prix Simula. (U)	$9.95	$14.95
Greeting Cards (BU)		$24.95
Guild of Thieves (AD)		$59.95
Gulf Strike (AA)		$39.95
Gunship (U)	$49.95	$59.95
Heavy Metal (AA)		$39.95
Hercules (AA)	$29.95	$39.95
History in Making (U)	$54.95	$54.95
Hot Shot (AA)	$29.95	$39.95
Hunt for Red Octo. (SI)	$39.95	$74.95
Hysteria (AD)	$29.95	$19.95
Ikari Warrior (AA)	$29.95	$39.95
Impossible Mission (AA)	$24.95	$34.95
In Crowd (AA)		$54.95
Indiana Jones (AA)	$29.95	$34.95
Infiltrator 2 (AA)		$39.95
Inside Outing (AD)	$29.95	$39.95
Into Eagles Nest (AA)		$49.95
Io (AA)	$29.95	$39.95
Jack Niclaus Golf (S)		$39.95
Jane 128 (H)		$??.??
Jeopardy (ED)		$29.95
Jet (U)		$94.95
Jordan V Bird (S)		$39.95
Junior Pac Man (AA)		$19.95
Karate Ace (AA)	$39.95	$54.95
Karnov (AA)	$29.95	$39.95
Keys to Typing (ED)		$39.95
Kwik Calc (BU)		$19.95
Kwik Check (BU)		$19.95
Kwik File (BU)		$19.95
Kwik Pad (BU)		$19.95
Kwik Write (BU)		$44.95
LA Crack Down (AD)		$34.95
Lancelot (AD)		$39.95
Last Ninja 2 (AA)	$29.95	$39.95
Leader Board 4 Pack (S)		$64.95
Leader Board Trip (S)		$39.95
Learn to Add & Su. (ED)		$54.95
Led Storm (AA)		$39.95
Legacy of Ancient (AD)		$39.95
Legend/Blk Silver (AD)		$29.95
Live & Let Die (AA)		$39.95
Lode Runner (AA)		$29.95
Lord of Rings (AD)	$49.95	$49.95
M128 Cash Book (B)		$164.95
Macarthurs War (ST)		$54.95
Magic Maths (ED)		$39.95
Magnificent 7 (AA)	$39.95	$54.95
Mainframe (AD)		$59.95
Mars Saga (SI)		$39.95
Match Day 2 (S)	$29.95	$39.95
Math Blaster (ED)		$99.95

	Cass.	Disk
Matterhorn Scream (AA)		$24.95
Mini Office 2 (BU)	$44.95	$49.95
Modem Wars (AA)		$39.95
Movie Maker (A)		$29.95
Music Construction (H)		$29.95
Music Studio (H)		$49.95
Musician (H)		$24.95
Nam (SI)		$74.95
Navcom 6 (ST)		$59.95
Neuromancer (ST)		$39.95
Newsroom (BU)		$59.95
Night Raider (SI)		$39.95
Ocean Ranger (AA)		$39.95
Ogre (SI)		$49.95
Operation Wolf (AA)	$29.95	$39.95
Outrun (AA)	$29.95	$39.95
Overlander (AA)		$39.95
Pacland (AA)	$39.95	$49.95
Pacmania (AA)	$29.95	$39.95
Paper Boy (AA)	$19.95	$19.95
Paperclip (BU)		$39.95
Patton V Rommel (SI)		$39.95
Pegasus (AA)	$29.95	$39.95
Pepsi Challenge M. (AA)		$39.95
Peter Beardsley S. (S)	$29.95	$39.95
Phantasie (SI)		$74.95
Phantasie 2 (SI)		$74.95
Pirates (AA)	$19.95	$49.95
Pirates of Barbar (AA)		$29.95
Pocket Filer 2 (BU)		$94.95
Pocket Planner 2 (BU)		$94.95

Pocket Writer 2 (BU)		$94.95
Pool of Radiance (SI)		$54.95
Predator (AA)	$29.95	$34.95
President is Miss. (AD)	$39.95	$49.95
Print Kit (BU)		$24.95
Print Shop (BU)		$79.95
Print Shop Compan. (BU)		$69.95
Print Shop Graphi. (BU)		$49.95
Printmaster (BU)		$74.95
Pro Soccer Simulator (S)		$39.95
Psyco Pigs UXB (AA)	$29.95	$39.95
Questron 2 (SI)		$44.95
R Type (AA)	$29.95	$39.95
Rack Em (AA)		$39.95
Rambo 3 (AA)	$29.95	$39.95
Rampage (AA)	$29.95	$34.95
Ramparts (AA)	$24.95	$29.95
Red Storm Rising (SI)		$59.95
Return of Jedi (AA)	$29.95	$44.95
Road Blasters (AA)	$29.95	$39.95
Road Runner (AA)	$29.95	$34.95
Road to Moscow (SI)		$94.95
Road Warrior (AA)	$29.95	$39.95
Roadwars (AA)		$39.95
Robo Cop (AA)	$29.95	$39.95
Rocket Ranger (SI)		$59.95
Roy of Rovers (AA)		$39.95
Russia (SI)		$54.95
Sargon Chess 3 (ST)		$34.95
Serve & Volley (S)	$29.95	$39.95
Signs & Banners (BU)		$24.95
Signs & Banners L. (BU)		$19.95
Silent Service (SI)	$39.95	$49.95
Sinbad & Throne O. (SI)		$54.95
Skate Crazy (S)	$29.95	$39.95
Skate or Die (S)	$29.95	$39.95
Skyfox (AA)	$29.95	$29.95

	Cass.	Disk
Skyfox 2 (U)		$39.95
Snoopys Read Machine (ED)		$29.95
Soccer Microprose (S)	$49.95	$64.95
Soldier of Light (AA)	$29.95	$39.95
Solo Flight (U)	$29.95	$49.95
Song Writer (H)		$19.95
Sorcerer of Claym. (AD)		$29.95
Space Ace (AA)	$39.95	$54.95
Spell It (ED)		$99.95
Sports World (S)		$39.95
Star Fleet (SI)		$64.95
Star Wars (AA)	$39.95	$44.95
Streetsport Baske. (S)		$19.95
Sub Battle Simula. (U)		$34.95
Summer Olympiad (S)	$34.95	$49.95
Superbase (BU)		$104.95
Superbase 128 (B)		$179.95
Superbike Challenge (AA)		$34.95
Superman (AA)		$49.95
Superscript (BU)		$104.95
Superscript 128 (B)		$179.95
Supersports (S)		$39.95
Superstar Ice Hoc. (S)		$49.95
Supreme Challenge (AA)	$29.95	$29.95
Swift (AA)		$54.95
Swiss Family Robi. (AD)		$39.95
Take 5 (AA)		$24.95
Task 3 (AA)	$29.95	$39.95
Task F (AA)		$19.95
Tempo Type (SI)		$34.95
Tetris (SI)		$39.95
Three Stooges (AA)		$54.95
Thunder Blade (AA)	$29.95	$39.95
Thunder Chopper (AA)		$29.95
Ticket to London (ED)		$59.95
Ticket to Paris (ED)		$54.95
Ticket to Spain (ED)		$54.95
Time & Magic (AD)		$29.95 $39.95
Times of Lore (ST)		$59.95
To Hell & Back (AA)		$29.95 $39.95
Tom Sawyers Islan. (AD)		$24.95
Top Fuel Challeng. (AA)		$29.95 $39.95
Top Gun (AA)		$29.95 $34.95
Treasure Island (AD)		$39.95
Tri Pack (AA)		$84.95
Trivial Pursuit N. (SI)		$44.95 $54.95
Trivial Pursuit T. (SI)		$44.95 $44.95
Typhoon (AA)		$29.95 $39.95
Typhoon of Steel (AA)		$54.95
Typing Tutor 4 (SI)		$54.95
Ugly Duckling (AA)		$44.95
Ultima 4 (AD)		$59.95
Ultima 5 (AD)		$59.95
Uninvited (AD)		$59.95
Up Periscope (U)		$29.95
Video Title Shop (A)		$39.95
Vindicator (AA)		$29.95 $39.95
Vixen (AA)		$29.95 $39.95
War Games Pack (SI)		$29.95 $29.95
War in Middle Earth (ST)		$44.95
Warp Speed (A)		$59.95
Warrior (AA)		$39.95
Warship (SI)		$74.95
Wasteland (AD)		$39.95
Wec Le Mans (AA)		$39.95
Where in Europe I. (ED)		$74.95
Where in USA (ED)		$74.95
Who Framed Roger (AA)		$39.95
Win Lose or Draw (SI)		$29.95
Wizard of Oz (AD)		$39.95
Word Master (BU)		$39.95
Wordpro + Turbo (BU)		$89.95
Word Publisher (BU)		$84.95
Word Writer 128 (B)		$59.95
Wordpro 128 (BU)		$89.95
World Class Leader (S)		$34.95 $39.95
Writer (AA)		$49.95
Zak McKracken (S)		$39.95

33M HARDCARD $699

MicroComputer Spot

Phone: 417 7395. Front 13 Gibbes Street, East Chatswood, NSW 2067

TOLL FREE (008) 25 2130

MAIL ORDER

2400/2400 BAUD MODEMS $399

IBM SOFTWARE

3D Helicopter Sim.	(SI) $64.95	Empire	(SI) $54.95	Mavis Beacon Teaches Typing	(ED) $94.95	Summer Olympiad	(S) $69.95
4th & Inches	(SI) $54.95	F16 Falcon	(SI) $74.95	Might & Magic	(AD) $79.95	Superbase	(BU) $259.95
4th & Inches Team Const. Set	$39.95	Fantavision	(A) $109.95	Mini Office Professional	(BU) $144.95	Superman	(AA) $69.95
2400 AD	(AD) $54.95	Fire Power	(AA) $49.95	Newsroom Pro	(BU) $144.95	Three Stooges	(AD) $79.95
Abrams Battle Tank	(ST) $59.95	Flight Simulator 2	(U) $114.95	Off Road Racing	(AA) $49.95	Thud Ridge	(SI) $64.95
Airborne Ranger	(AA) $59.95	Flippit	(SI) $39.95	PC Gold Hits	(AA) $49.95	Thunder Chopper	(AA) $69.95
Art Studio	(A) $59.95	Galaxian	(AA) $19.95	Pole Position	(AA) $19.95	Ticket to London	(ED) $74.95
Balance of Power	(SI) $79.95	Games Summer Edition	(S) $49.95	Police Quest 2	(AD) $64.95	Ticket to Paris	(ED) $69.95
Bards Tale 2	(AD) $64.95	Grand Slam Bridge	(SI) $84.95	Pool of Radiance	(ST) $54.95	Ticket to Spain	(ED) $74.95
Battle Chess	(ST) $74.95	Guild of Thieves	(AD) $69.95	President is Missing	(AD) $59.95	Times of Lore	(AD) $69.95
Battletech	(ST) $69.95	Gunship	(SI) $79.95	Print Power	(U) $69.95	TKO	(S) $59.95
Build a Book	(ED) $39.95	Heroes of Lance	(AD) $54.95	Print Shop	(U) $109.95	Turbo Cup + Car	(SI) $79.95
Calendar Creator Plus	(BU) $94.95	Impossible Mission 2	(AA) $49.95	Program Director	(U) $84.95	Ultima 4	(AD) $59.95
California Games	(S) $49.95	Inside Trader	(AD) $59.95	Pro Soccer Simulator	(S) $54.95	Ultima 5	(AD) $59.95
Championship Lode Runner	(AA) $69.95	Jack Nicklaus Golf	(S) $64.95	PT 109	(ST) $74.95	Wargame Construction Kit	(SI) $74.95
Chessmaster 2000	(SI) $64.95	Jet Fighter	(SI) $89.95	Questron 2	(AD) $54.95	War in Middle Earth	(ST) $59.95
Chuck Yeagers Flight Si	(SI) $64.95	Jordan V Bird	(S) $49.95	Rocket Ranger	(SI) $79.95	Where in USA is Carmen Sandiago	(ED) $79.95
Chuck Yeager Flight Sim. 2	(SI) $7[illegible].95	Keyboard Cadet	(ED) $19.95	Serve & Volley	(S) $64.95	Where in World is Carmen	(ED) $79.95
Colourme	(ED) $59.95	Kings Quest 3	(AD) $54.95	Silent Service	(SI) $59.95	Who Framed Roger Rabbit	(AA) $64.95
Defender of Crown	(SI) $59.95	Kings Quest 4	(AD) $94.95	Skyfox 2	(AA) $64.95	Willow	(AD) $59.95
Deluxe Paint 2	(A) $249.95	Leisure Suit Larry	(AD) $64.95	Space Quest	(AD) $54.95	Winter Games	(S) $54.95
Double Dragon	(AA) $74.95	Leisure Suit Larry 2	(AD) $64.95	Space Quest 2	(AD) $64.95	World Class Leader Board	(S) $49.95
Dragonscape	(AD) $59.95	Manhattan Dealers	(AA) $69.95	Stock Portfolio	(BU) $24.95	Your Personal Poet	(H) $39.95
Elite	(AA) $69.95	Manhunter New York	(AD) $74.95	Summer Games 2	(S) $49.95	Zac McKracken	(AD) $74.95

AA	Arcade Action	BU	Business	U	Utility
S	Sport	ED	Education	A	Art & Graphics
AD	Adventure	ST	Strategy	M	Music
H	Home	SI	Simulator		

MicroComputer Spot

CITY
Shop 3, 99 Elizabeth Street,
Sydney, NSW 2000
Phone 221 1910

PARRAMATTA
Shop 21a, Greenway Arcade,
222 Church Street,
Parramatta, NSW 2150
Phone 891 1170

HORNSBY
35F Hunter Street,
Westfield Shoppingtown,
Hornsby, NSW 2077
Phone 477 6886

CHATSWOOD
Shop G9, Chatswood Place,
Endeavour Street,
Chatswood, NSW 2067
Phone 419 2333

BURWOOD
185 Burwood Road,
Burwood, NSW 2134
Phone 744 8809

HURSTVILLE
185E Forest Road,
Hurstville, NSW 2220
Phone: 570 7333

PENRITH
Shop 1, Carvan Arcade,
389 High Street,
Penrith, NSW 2750
Phone (047) 32 3377

LIVERPOOL
Shop 4, Westfield
Shoppingt'n, Macquarie
St, Liverpool, NSW 2170
Phone 601 7700

MAIL ORDER FORM

PHONE FOR LATEST NEW RELEASES

PRODUCT/PROGRAM NAME	COMPUTER	CASSETTE/DISK	QUANTITY	PRICE

For Software only, add $3.00 for post or $10.00 for courier. For hardware, call to arrange.

Send to: Microcomputer Spot
13 Gibbes Street, Chatswood, NSW 2067

We will exercise all reasonable care in the processing of your orders but we accept no responsibility for orders, monies or products lost or delayed in transit. Your order will normally be processed within 48 hours, but please allow 14 working days for the fulfilment of orders. Telephone orders are, of course, welcome, but unfortunately, COD terms are not available. Wherever possible, please supply a phone number where contact can be made within normal working hours. **PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. DO NOT SEND CASH.**

Method of payment, tick for Cheque ☐ Postal Order ☐
Tick for Bankcard ☐ Mastercard ☐ Visa ☐ AGC ☐

Credit Card No. | | | | | | | | | | | | | | | | |

Valid from _____ Until end _____

Name as per card _____

TOTAL $ _____

POSTAL CHARGE $ _____

GRAND TOTAL $ _____

For delivery:

Name _____

Address _____

_____ Postcode _____

Telephone ( ) _____ Date Sent _____

Signature of cardholder _____

TeleCheck MasterCard VISA CREDIT LINE

Picking a Printer

by Andrew Farrell

I sat down and stared at all the boxes and packing. It's now seven years since I first ripped open the box on a dot-matrix printer. It cost me $500, which was a special price for computer journos. List price was a bit over the $600 mark. The speed was slow, the print quality characteristically dotty. However, the printer was a solid unit, that went on to put in many years of solid service.

Today's printers have all sorts of fandangled features. However, my experience has shown that it's the basic design that tends to be the biggest let down of many models.

There is a C-Itoh printer at our office, left over from a previous printer round-up. It seems they never got around to collecting the thing, so after a customary six months cold store, we started using it. It was funny to see how my original opinion changed as this once beautiful printer was put through its paces.

I quickly got very tired of the front cover, which would fall off into your hand whenever you opened it to inspect the ribbon or print alignment. Since it is a 160 column machine, this made a simple task very cumbersome. Not long ago, the mechanism which chooses between friction and tractor feed broke. The cog controlling selection appears to slip for some reason. These and other problems soon made the brilliant print quality fade into insignificance. No one would bother to use the thing, until eventually I heaved it off the table and placed it back into cold store.

So, now I approach every new printer as a complete cynic. I am very demanding on the simplest aspects of printer design. With this in mind, here's a summation of the printers we managed to drag in for a quick test, in price order.

(Of course, as the many letters to the editor attest, the first thing you should check before buying a printer is that it will work with not only your hardware, but the software applications you wish to run!)

We received a number of weird and wonderful models which were too strange to include - either the overall setup or compatibility was in question. The following brief overview represents the printers you will commonly find in computer stores.

The first thing you should check before buying a printer is that it will work with not only your hardware, but the software applications you wish to run!

Be careful of brands imported from Taiwan - sometimes only a limited number are brought into the country by a wholesaler who then no longer supports or continues to supply that model. Buy an odd choice and you may be the only user in town running that model - and then you're on your own.

AROUND $500

Citizen 120D/5200 or Commodore MPS 1250

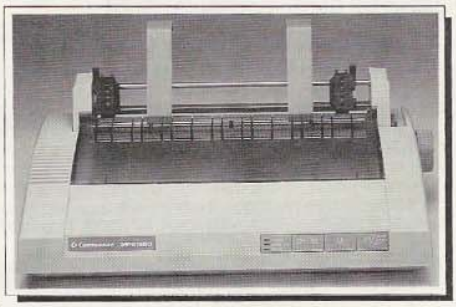
RRP $499.00

Distributor: Commodore

These two guys are the same printer - although the Commodore version comes better packed, and with an additional serial interface. The Citizen is a parallel only job. The parallel cable included is great - great that they included it, and great quality.

The printer is lightweight, with an attachable tractor feed mechanism. A simple clip on, clip off job. Not bad. The manual is beefy, with lots of examples, explanations and line drawings.

The first thing I did was load some paper. A dozen screwed up sheets later, and a few inherent design faults seemed to be rearing their ugly heads very early in the piece. There is no bail lever - the lid is supposed to guide the sheet. This does not work very well. If the print head is not centred, the paper catches. Sometimes the ribbon comes with it, other times the sheet just tears. Was I doing something wrong?



This machine is supposed to be competing with the Star range of machines. Admittedly it is cheaper. It is Citizen - which they say means quality. Construction was quite good - but the end result and basic use of the machine just doesn't rate. My advice - spend the extra money. Get a Star NX-1000. A classic example of where the extra bells and whistles amount to nothing because of a simple design fault.

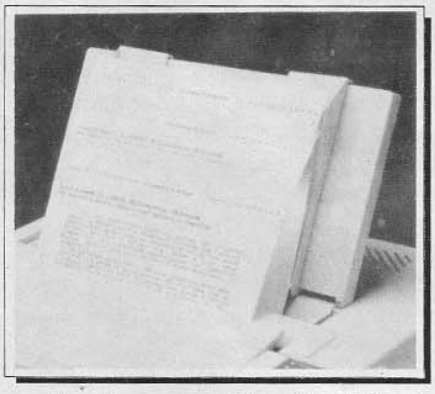
Epson LX800 Printer

RRP $540.00

Distributor: Epson

This is Epson's latest low-cost high-quality printer. It is a 9 pin dot matrix unit able to print up to 180 characters per second in draft mode.

A variety of styles can be selected using the control panel on top. Apart from draft, there are two NLQ



modes, Roman and Sans Serif. In addition a number of typefaces can be used, many simultaneously. In draft mode there is emphasized, doublestrike, condensed and elite. In NLQ emphasized and elite are available. Single sheet paper is easy to load using the auto-load feature. Continuous paper feeding for forms and labels is possible using the tractor feed mechanism supplied.

Quality of printing is, as expected, quite good and the unit is easy to use when you get used to the double action touch switches.

Cut Sheet Feeder for LX800 and LQ500

RRP $216.00 (fits both)

A cut sheet feeder is available to suit both the LQ500 and LX800 that gives you easier and more efficient handling of single sheet paper. You can stack up to 100 sheets of standard bond paper in the cut sheet feeder at one time, and a new sheet is automatically loaded whenever required. It is quick and easy to instal and works well.

Star NX-1000

RRP $490-$550

Distributor: Star Micronics

Star have been making successful small printers for a long time. The NX-1000 and NX-24 have both been written about in these pages many times. They are reliable, featured crammed, easy to use, good value for money. Everything is included. Although both a little plasticy and flimsy-feeling, they work well.

Tractor feed paper parking, auto paper load, various fonts, NLQ mode and the list goes on. Many options can be selected using combinations of the ONLINE/FF/LF keys. Indicators show you what is selected. Documentation is good - if a little complex in parts. There are handy help sheets, stick on guides and more. Recommended.

TASWORD 64

Tasword 64, the professional word processor for the Commodore 64 computer. With 80 character per line display, what you see on the screen is what you get in your print out.

Other features include onscreen formatting, comprehensive help commands, full cursor movement control, delete, insert, tab, search and replace, block commands, sophisticated print options and program customization to suit all dot matrix printers.

Price **Cassette $43.00**
Disc $49.95

TAS-SIGN 64

Tas-sign 64, the sign maker program for Commodore 64 computers. Allows production and printing of signs, posters, banners and large notices. Print across or along the printer paper in six distinctive lettering styles with characters at any height from less than 25mm to the full width of the paper. Other features include italic printing, underlining, constant or proportional letter spacing, automatic kerning, line centering, 8 shading patterns, borders, and the ability to drive nearly all dot matrix printers.

Price **Disc $59.00**

Australian Distributor

dolphin computers pty ltd

unit 2 7 waltham street
artarmon nsw 2064
telephone (02) 438 4933
telex 20668
facsimile (02) 438 1480

At discerning computer shops or mail order from Dolphin. Mail $1.50 o/night courier $7.00. Enclose cheque/money order/Bankcard/Visacard/Mastercard details. Prices include sales tax and are recommended retail.

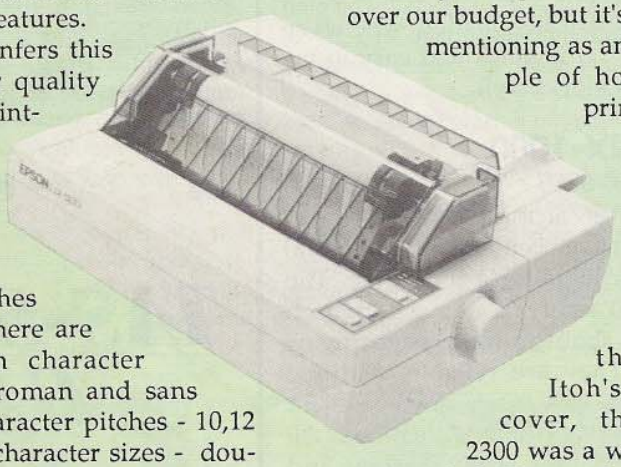
● Dealer enquiries welcome ●

UP TO $1000

Epson LQ500 Printer

RRP $828.00
Distributor: Epson

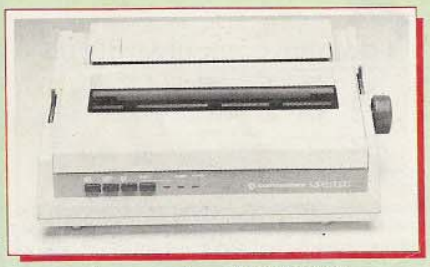
This is the youngest member in Epson's line of 24 pin dot matrix printers, combining a compact design and high performance with a wide range of features.



As the LQ infers this is a true letter quality printer. The printer can produce a wide range of type styles by using different character fonts, pitches and widths. There are three built in character fonts - draft, roman and sans serif. Three character pitches - 10,12 and 15. Three character sizes - double-width, double-height, and double-width-and- double height as well as condensed.

Other effects achievable are emphasized, double strike, continuous underlining, superscripts, subscripts, outline and shadow. Pictures, graphs and charts can also be produced with the appropriate software.

Paper loading is simple using the auto load feature for single sheets or the tractor feed supplied with the unit. Jamming on the cover plate occurs occasionally but can be rectified with a bit of filing of the plastic cover.



Commodore MPS-2020

An exceptional quality unit for its size, price, quality and range of features. A very good unit for achieving professional quality printouts. The one I use at home.

Fujitsu DX-2300

RRP $982.00
Distributor: Imagineering

Admittedly this printer is a tad over our budget, but it's worth mentioning as an example of how real printers are built. After my beef with the C-Itoh's front cover, the DX-2300 was a welcome relief. The entire front cover collapses out of the way, in a three-fold movement. It remains attached to the printer - unless you slide it forward, in which case away she comes and you have full access to everything that matters.

Selection of friction and tractor feed is by means of a slide mechanism. The movement is firm. Inserting paper is a breeze. Just insert the page, and press Form Feed. Holding down the FF and LF buttons allow reverse adjustments.

Documentation is more of a reference than tutorial, in a three ring small sized binder. Nevertheless, informative enough to overcome most problems. Print quality is excellent and the operation is very quiet.

If you want a serious printer, that will last, at a fairly serious price, this is the pick of the bunch. High speed, high quality and long life - with good service and back up. The professional choice.

OVER $1000

Commodore MPS-2020 or Okimate 292

RRP $1299.00
Distributor: Commodore

One of my favourite printers. There are better, but more expensive alternatives - but the 2020 (a re-badged Okimate 292) is the one I keep coming back to when the others break down. The documentation is a dream - full colour pictures, simple instructions and problem solving section. There's even a photo of the innards with help on where to find the fuse.

The printer itself is very full featured, with colour that is acceptable for simple piccy dumps, but ideal for reports, bar charts and the like.

The 2020 is a smart printer - there are lots of options you can control in the printer itself. By holding down the FORM FEED button as you switch on, the printer goes into menu mode. From here many different options can be controlled. This is fine when the program you are using doesn't provide control over some problem that has cropped up, or if you want to enhance your output quickly.

NLQ mode is pretty good, paper loading is not as elegant as some - you have to flip the bail forward and then back, however it has a solid feel that works every time. (More important than single button loading). Overall, an excellent choice for Amiga owners. For C64ers thinking of upgrading - this is the way to go. Various emulation modes are available built into the personality module. (Other modules are available).

Maxwell's 24 HOUR MAIL ORDER

SOFTWARE ☆ GALORE

GUARANTEED SERVICE ☆ SAME DAY DESPATCH*

SOFTWARE . . . FIRST WITH THE LATEST . . . NEW TITLES DAILY

1000's OF TITLES ☆ AMIGA ☆ IBM 5¼" & 3½" ☆ C= 64 ☆ C=128

DATABASES $

GEOFILE 128 99.95
DATATRIEVE AMD 99.95
SUPERBASE PERS/II AMD 199.95
SUPERBASE PROF AMD 499.00
HOME INVENTORY IBM 29.95
GEOFILE 64 99.95
POCKET FILER II 64D 89.95

WORDPROCESSORS

GEOS W W/SHOP128 119.95
EXCELLENCE AMD 495.00
KINOW OR DS V2 AMD 199.95
PROF/PAGE 1.1 AMD 599.00
TEXTCRAFT PLUS AM 65.00
PAGESTREAM AMD 339.95
WEBSTER WR/SP/THES 199.95
TASWORD IBM 129.95
WORDPERF/5.0 IBM 895.00
PAPERCLIP & SPELL 64D 34.95
PAPERCLIP PUBLISH/64D 49.95
POCKET WRITER II 64D 89.95
TASWORD 64D 69.95
GEOPUBLISH 64D 89.95

SPREADSHEETS

GEO CALC 128 99.95
ANALYSE II SPRD/AMD 212.95
SUPERPLAN AMD 199.00
KWIK CALC 64 19.95
SPREADSHEET + 64D 44.95

ENTERTAINMENT

BILLIARD 3D AMD 49.95
BAAL AMD 59.95
CAPONE AMD 49.95
BUBBLE-BOBBLE AMD 49.95
BALANCE/PWR '90 AMD 79.95
BARDS TALE II AMD 49.95
BATTLEHAWKS AMD 59.95
BATTLETECH AMD 64.95
BALLISTIK AMD 54.95
CARRIER CMD AMD 69.95
DEFCON V AMD 69.95
DRAGON'S LAIR AMD 89.95
DOUBLE DRAGON AMD 44.95
ADVICONS/SET AMD 29.95
DUNGEON MSTR AMD 64.95
ELITE AMD 49.95
FLIGHT SIM/II AMD 89.95
HUNT/RED OCT AMD 44.95
F-16 FALCON AMD 54.95
FERRARI F-1 AMD 49.95
KING'S QUEST 1/2/3 AMD 44.95
LEISURE SUIT LARRY AMD 54.95
GUNSHIP AMD 79.95
FOOTBALL MGR II AMD 49.95
4TH & INCHES AMD 44.95
GALDREGOM'S DOM/AMD 44.95
HOSTAGES AMD 64.95
HEROES/LANCE AMD 59.95
INTERCEPTOR F18 AMD 49.95
STAR GLIDER II AMD 89.95
JOAN OF ARC AMD 44.95
KIKUGI AMD 39.95
KENNEDY APPR/AMD 59.95

KRISTAL AMD 69.95
LAST DUEL AMD 49.95
LOMBARD RAC/V AMD 59.95
LUDICROUS AMD 54.95
OFF SHORE WARR/AMD 54.95
OP NEPTUNE AMD 54.95
POKER AMD 29.95
POLICE QUEST AMD 54.95
ROCKET RANGER AMD 79.95
REAL GHOSTBUST/AMD 59.95
RAMPAGE AMD 54.95
RENEGADE AMD TBA
R-TYPE AMD 59.95
SUB-BATTLE SIM/AMD 59.95
SUPER HANG-ON AMD 49.95
SPACE HARRIER AMD 44.95
SPACE BALLS AMD 64.95
SWORD OF SODAN AMD 59.95
THREE STOOGES AMD 79.95
TIME & MAGIC AMD 49.95
TV SPORTS FTBL/AMD 74.95
TEST/DRV II S/CARS AMD 39.95
THUNDERBLADE AMD 54.95
UMS UNIV/MIL/SIM AMD 59.95
WHO FRAMED R/R AMD 49.95
WAR/MID/EARTH AMD 74.95
ZORK ZERO AMD 74.95
CHARLIE CHAPLIN 69.95
ANC/ART WAR IBM 89.95
DRILLER IBM 69.95
DEFCON V 5¼" IBM 59.95
MEAN 18 GOLF IBM 62.95
LEIS/SUIT LARRY IBM 52.95
STARTREK KOBY/ALT IBM 49.95
WHERE/WRLD/CARM/IBM 64.95
SPACE/OST 3½/5¼" IBM 59.95
DARK CASTLE IBM 49.95
3D HELICOPTER IBM 52.95
SCRABBLE IBM 59.95
F-16 COMBAT PILOT IBM 59.95
DESTROYER IBM 49.95
F-19 STLTH/FIGHT/IBM 119.95
FLT/SIM/III 5½" IBM 89.95
PAWN THE IBM 79.95
HITCH-HIKER'S GUIDE IBM 62.95
INTO/EAGLES NEST IBM 69.95
INSIDE TRADER IBM 54.95
KINGS QUEST IV IBM 79.95
KING OF CHICAGO IBM 79.95
MAN HUNTER NY IBM 62.95
PLATOON IBM 69.95
POLICE QUEST II IBM 54.95
QUINK IBM 19.95
SYSTAR SOCCER IBM 59.95
S/BIKE CHALLENGE IBM 29.95
SPEEDBALL 2, 3.5/5¼" IBM 69.95
SPACE MAX IBM 69.95
THE GAMES WINTER/IBM 69.95
WHERE/EURO/CARM/IBM 64.95
WORLD TOUR GOLF IBM 59.95
ZANY GOLF-ESCAPE IBM 59.95
AFTERBURNER 64D 36.95
ALLSTAR TEST CKT 64D 29.95
BATMAN 64D 39.95
BLACK JACK ACAD/64D 59.95
AIRBRN/RANGER 64D 59.95
BARDS TALE II 64D 34.95
CAPTAIN BLOOD 64D 39.95

CRAZY CARS II 64D 39.95
DRAW POKER 64D 34.95
CVEAGLES NEST/SIM 64D 34.95
D/THOMPS/CHALL 64D 35.95
C/MAN UGHLY/MP/S 64D 34.95
DEATHLORD 64D 34.95
DRAGON NINJA 64D 36.95
EARTH ORBIT STN 64D 29.95
ECHELON + LipStick 64D 62.95
4 × 4 OFF ROAD 64D 34.95
FOOTBALL MGR II 64D 39.95
FAMILY FEUD 64D 29.95
F18 HORNET 64D 36.95
FISTS & THROTTLES 64D 29.95
FLYING SHARK 64D 39.95
F-14 TOMCAT 64D 39.95
HEAVY METAL 64D 35.95
IKARI WARRIORS 64D 34.95
INTNL SOCCER 64D 29.95
JACK NICKLS/GOLF 64D 36.95
JORDAN v BIRD 64D 34.95
LEGACY/ANCIENTS 64D 34.95
MONOPOLY 64D 39.95
PIRATES 64D 44.95
L. A. CRACKDOWN 64D 34.95
LAST NINJA II 64D 39.95
PLATOON 64D 39.95
STRIKE FLEET 64D 34.95
MCR/PSE SOCCER 64D 59.95
SUB-BATTLE SIM/64D 29.95
SKATE OR DIE 64D 34.95
1943 64D 36.95
THUNDER CHOPPER 64D 29.95
TRIVIAL PURSUIT 64D 19.95
PRES/MISSING 64D 49.95
PATTON v ROMMEL 64D 34.95
ULTIMA V 64D 59.95
POOL OF RADIANCE 64D 49.95
PACMANIA 64D 39.95
WAR GAME CNST/SET 64D 34.95
WR/WRLD/CARMEN 64D 59.95
RESCH/STARS 64D 49.95
RED STORM RISING 64D 54.95
ROBOCOP 64D 39.95
STEALTH MISSION 64D 99.95
TAB BETTING 64D 34.95
TIMES OF LORE 64D 34.95
TOTAL ECLIPSE 64D 34.95
WASTELAND 64D 29.95
WAR GAMES PACK 64D 24.95
ZAK MCKRACKEN 64D 39.95

EDUCATION

AMIGA DOS TRNG/KIT 50.00
DISCOVERY MATHS AMD 59.95
DESIGNOSAURUS AMD 74.95
FUN SCHOOL 2 u6 AMD 49.95
HOI TALK AMD 44.95
KINDERAMA AMD 84.95
MATH TALK AMD 44.95
INTELLITYPE AMD 49.95
ALPHABET/PRC IBM 49.95
BIG BIRD'S DELIVERY IBM 34.95
ERNIE'S BIG SPLASH IBM 29.95
GROVERS ANML/ADVENT/IBM 39.95
SPELLICOPTER IBM 59.95
MIXED-UP MOTHER GOOSE IBM 59.95
MASTERING YOUR PC IBM 39.95

BASIC PGM SKILLS SET A-I 64D 19.95
BETTER SPELLING 64D 19.95
CHEM LAB C64D 49.95
DEC/FRACTS/PERCENT 64D 15.95
GT GONZO WORD RIDER 64D 19.95
MCGRAW HANGMAN III-VI 64D 14.95
MCGRAW LEARNING SERIES 64D 14.95
KEYS TO TYPING 64D 34.95
KEYBOARD CADET 64D 19.95
LEARN THE ALPHABET 64D 19.95
RACE CAR ARITHMETIC 64D 24.95
MATHS BUSTERS 64D 19.95
STICKYBEAR NUMBERS 64D 49.95
TYPING TUTOR/IV 64D 49.95
SNOOPY'S READ/MACHINE 64D 24.95
SPEED READER II 64D 79.95
TYPING IS A BALL CHARL B 64D 24.95

BUSINESS

D BUDGET: BUSINESS AMD 94.95
BEST BUS. MANAGE/ACC AMD 495.00
ELECT/CASH BOOK AMD 199.00
PHASAR V3.0 BUDGET AMD 134.95
ORGANISE AMD 134.95
WORKS: PLATINUM EDTN AMD 399.00
SYBIZ AMD 995.00
ACC PAC (Easy) IBM 140.00
BPS BUSINESS GRAPHICS IBM 269.00
BUSINESS MANAGER I IBM 495.00
ABLE ONE 5¼" IBM 195.00
RESUME IBM 79.95
ELECT/CASH BOOK 510206 99.00
M64 CREDITORS SYSTEM 100.00
M64 DEBTORS PACKAGE 64D 100.00
M64 GENERAL LEDGER 64D 100.00
MINI OFFICE II 64D 54.95
M64 SALES ANALYSIS 64D 99.95
M64 STOCK CONTROL 64D 99.95
TECH/ANALYSIS SYSTEM 64D 99.95

UTILITIES

1571 PHYSICAL EXAM 128 79.95
G.E.O.S. II 128 99.95
BENCHMARK MODULA II AMD 294.95
AMIGADOS 1.3 ENHANCER PACK 30.00
DEVPAC AMD 149.00
GFA BASIC VER3.0 AMD 199.00
LATTICE C VERS. 0 AMD 439.00
QUARTERBACK 1.4 AMD 129.95
SUPERBACK AMD 129.95
AMIGADOS TOOLBOX AMD 89.95
DOS R UTILITIES TW IBM 99.95
ASSEMB/MONTR 64D ABACUS 79.95
BLITZ BASIC COMPILER 64D 39.95
DOUBLE IMAGE II 64D 54.95
COBOL 64 ABACUS 89.95
FREEZE MACHINE/FR. UTIL/64D 29.95
ACTION REPLAY ENHANCE/DISK 24.95
EXPERT CARTRIDGE UTIL/64D 29.95
GEOS FONTPAK I 64D 49.95
GEO PROGRAMMER 64D 99.95
G.E.O.S. II 64D 99.95
SUPER PASCAL 64D ABACUS 129.95
QUICKDISK MK. II 64D 54.95
ACTION REPLAY V 64C 159.95
FINAL CARTRIDGE III 64C 129.95
FREEZE MACH/FRAME IIIB 64C 109.95
MACH 5 UTILITY 64C 49.95

ULTRA CRUNCHER COMPACT/64C 49.95
FAST LOAD CARTRIDGE 64C 49.95
DOLPHIN DOS 64C 169.95
EXPERT CARTRIDGE 64C 109.95

GRAPHICS/MUSIC

AWD/MKR + AMD 69.95
DLXE/PNT III AMD 229.95
DIREC/R TOOL KIT AMD 49.95
COMIC SETTER AMD 144.95
D/VW/III/GOLD AMD 353.00
D/DROID FOR /D/VW AMD 179.95
ANIMATE 3D AMD 229.00
DR/2/3D CAD AMD 495.00
FTR/SOUNDD SYNTH/D AMD 429.95
EXPR/PNT III AMD 199.95
V/SC 3D V2.0 AMD 349.95
PERF/SOUND DIGIT/R 169.00
JDK P/VID + AMD 399.00
SCULPT 3D ARCH/DES 59.95
SCULPT 3D HUM/DES AMD 59.95
TV TEXT GR/PRES AMD 184.95
LTS/CAM/ACT AMD 129.95
MODELLER 3D AMD 189.95
MOVIE SETTER AMD 139.95
PHOTON/PNT III AMD 199.95
ZOETROPE AMD 199.00
AWARD MAKER 64D 59.95
ARTIST 64D 79.95
CADPAK 64 ABACUS 69.95
CERTIF/MAKER C64D 69.95
CHARTPAK 64D 69.95
CRTE/W/GFLD 64D 64.95
DODDLE 64D 59.95
FLEXIDRAW 5.5 64D 69.95
GED CHART 64D 49.95
GRPH/GAL/MAP/WLD 49.95
KWIK PAINT 64D 24.95
INSTANT MUSIC 64D 34.95
LOVE NTE/MKR 64D 39.95
NEWSROOM 64D 59.95
PRNT/MST/S + 64D 74.95
PRNT/SHP/GI/LIB 1/2/3 64D 49.95
PRNT/SHP/CMP/64D 54.95
PRINT POWER 64D 59.95
VID/TTL/SHP/64D 39.95

SPECIAL INTEREST

FAMILY TREE AMD 89.95
G.P. TERM V4.0 AMD 99.95
BBS 64 BULTN/BRD 69.95
FAMILY TREE 64D 99.95
KITCHEN MGR/64D 29.95

DISK BOXES

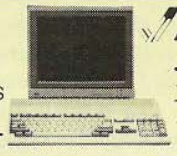
IAD CLNG/DISK 5¼" 15.00
IAD CLNG/DISK 3½" 15.00
IAD WRT/PROTCTRS 7.95
DISK NOTCH/METAL 14.95
DISK NOTCH/PLASTIC 9.95
MULTI FIN 3½" 120 IAD 29.95
DSK/BOX LK 3½" 80 IAD 24.95
DSK/BOX LK 3½" 40 IAD 19.95
DSK/BOX LK 5¼" 100 IAD 19.95

CAN'T FIND IT? GIVE US A CALL

64D = C64 DISK AMD = AMIGA DISK IBM = IBM DISK

HARDWARE . . . COMPUTERS . . . DRIVES . . . MONITORS . . . PRINTERS . . .

AMIGA 2000B
XT/AT CARDS
$CALL



AMIGA 500 1084S
$CALL

C= PC 10III COLT
$CALL

XT/AT
COMPATIBLES PACKAGED TO SUIT
$CALL

AMSTRAD
1512, 1640, 2086, 2286, 9512
$CALL

AMSTRAD
PORTABLES
$CALL

SHARP
PORTABLES, LAPTOPS
$CALL

C64/C128

C64 Family Pack	$299
C64 Pro Pack	$599
1541C Drive	$349
Datassette	$49
C128D	$599
Parallel Printer I/F	$119
Parallel Printer 8K	$139
RS232 Interface	$99
Serial Interface	$145

CARDS

A2090A	$899
A2088/86 Kit	$999 /1990
A501 RAM/Clock	$299
A500 512KB RAM	$530
A500 1MB RAM	$760
A500 2MB RAM	$1220
AMIGA Drives	fr $249

PRINTERS
STAR/NEC/C=/PANASONIC
Pin/Col./NLQ/15" $Call

DISKS . . . BOOKS . . . RIBBONS . . . CABLES . . . JOYSTICKS . . . MODEMS . . .

BOOKS

1571 INTERNALS BOOK 39.95
BASIC 7.0 INTERN/128 49.95
C.A.D. 128 BOOK 39.95
PROGRS/REF/GDE 128 44.95
AMIGADOS Q/REF/G ABAC 19.95
USING DELUXE PAINT II 39.95
FIRST BOOK/AMIGA 38.95
AMIGA/BEGINN/BK 34.95
AMIGADOS MAN/BANTAM 49.95
AMIGADOS INS/OUT ABAC 39.95
KIDS/AMIGA/COMPUTE 33.95
AMIGA MACH/LANG/ABAC 39.95
AMIGA BAS/IN/OUT ABAC 39.95

BARDS TL/1/2/3 CLUE BK 24.95
AMIGA M/LANG/PROG/G 39.95
AMIGA/500/2000 T/S/MAN 84.95
ADV AMIGA/BASIC/COMP 39.95
MORE TRKS & TIPS AMB 39.95
AMIG/TRKS & TIPS ABAC 39.95
KINGS/QST 1/2/3/4 HINT BK 14.95
POLICE/QST HINT BOOK 14.95
POOL/RADHINT/BK 24.95
ULTIMA III/IV/V CLUE BK 19.95
WASTELAND/HINT/BK AM 24.95
AMIGA DOS IN/OUT DISK 39.95
WORDSTAR 4.0 IBM/BK 29.95
WORD PERFECT IBM/BK 29.95

HOW/GET MOST/GEOS 1.2 BK 24.95
64 PROGRS/REF/GD/BK 22.00
C64 USER GUIDE CBM 12.00
MGT/MAGIC HINT BK ONE 19.95
MSTR/COLL/EPYX /K/BK 19.95

CABLES

AMIGA or PC $30
RS232- $30
PC Kybd Extension $18
Joystick Extension $20
Monitor Cables $Call

JOYSTICKS

AMIGA MOUSE MASTER 79.95
AMIGA 1000 MOUSE CLEANER 50.00

GEN/MSE – DR HALO PK PC 169.00
1351 MOUSE C64/C128 79.95
WICO TRACK BALL 99.95
WICO THE BOSS 44.95
STAR/CURSOR/JOYSTICK 3Y 49.95
KONIX NAVIGATOR JOYSTICK 34.95
200X AUTOFIRE JOYSTICK 29.95
PRO 5000 JOYSTICK BLACK 39.95
ANALOG + JOYSTICK IBM 69.95

MODEMS

C64 Viatel $Call
Avtek C64/128 $Call
Megamodem 123 $Call
Megamodem 1234 $Call

DISKS

MEMOREX 3.5" DS DD × 20 50.00
MEMOREX 3.5" DS DD 27.50
MEMOREX 5.25" DS DD 24.95
MEMOREX 5.25" DS QD 96TP 29.95
MEMOREX 5.25" DS HD PC/AT 39.95
VERBATIM 3.5" DS QD VALU 5PAK 24.95
VERBATIM 3.5" DS DD DATALIFE 49.95
VERBATIM 5.25" DS DD DATALIFE 31.50
VERBATIM 5.25" DS DD VALULIFE 19.95
VERBATIM 5.25" DS HD VALULIFE 34.95
Abacus Disks $29

HUGE RANGE OF MANUALS

10 GREAT REASONS TO SHOP MAXWELL'S FROM HOME.

1 **TOLL FREE HOTLINE**
We offer toll free ordering outside metropolitan Melbourne, 24 hour orders line and a customer enquiries line.

2 **RELIABLE SERVICE**
*All goods despatched within 24 hours when stock is available. All queries answered A.S.A.P.. No order is too small.

3 **GREAT PRICES**
All prices quoted are correct at time of printing and we'll match any regular price advertised in this magazine.

4 **CUSTOMER PROTECTION**
Credit cards are not charged until goods are despatched. All products carry manufacturer/distributors guarantee. All computers are tested before despatch.

5 **BETTER BACK-UP**
Friendly advide and after-sales support from experienced staff. Plus special offers and priority service for existing customers.

6 **EASY PAYMENT**
We accept Bankcard, Visa, Mastercard, AGC, Money Orders, Bank Drafts and cheques. Allow ten days for cheques. Credit card users please specify full name on card, card number and expiry date.

7 **SET POSTAL RATES**
Software: $3 per item (Max. $9 per order) via Certified mail. $10 via Courier. Hardware: Call to arrange freight.

8 **REPUTABLE SUPPLIER**
Maxwell Office Equipment has been in business for 20 years. We are Commodore Australia's Dealer of the Year, and authorised Government/Education supplier and Service Centre. Maxwell's has the largest computer showroom in Victoria (and probably Australia) and carry a huge range of software, computers and accessories.

9 **UP-TO-DATE**
At Maxwell's we take pride in keeping up to date with the latest hardware and software developments so you the customer get the best advice and the newest product.

10 **MAXWELL POLICY**
Our main aim is to provide a fast, efficient and worry-free mail order service Australia-wide.

Dealer of the Year Awarded to Maxwell Office Equipment Victoria

SUPERPIC AMIGA REAL TIME FRAME GRABBER $CALL

ESTABLISHED 1968

ORDERS 03-4171480 24 HRS OR TOLL FREE 008-334434

Bankcard VISA MasterCard AGC CREDIT LINE

CUSTOMER SERVICE 03-4196811 FAX 03-4190160
Send Mail Orders to FREEPOST 2
162-164 NICHOLSON ST. ABBOTSFORD VIC 3067

RETURN & REFUND POLICY: All returns must have a Return Authorisation number. Call customer service to request an R.A.#. Defective merchandise under warranty will be repaired or replaced. Returned products must be complete with all original packaging. We do not offer refunds for defective products or for products that do not perform satisfactorily. We make no guarantees for product performance. Any money back guarantees must be handled directly with the manufacturer.

Better Working Word Publisher

by Frank Paterson

As the popularity of GEOS grows, more and more software is being seen from third-party publishers eager to take advantage of the rejuvenated C-64 and C-128 market which this remarkable operating system has generated. This article was to have been a review of a GEOS-based wordprocessor from one such publisher, Spinnaker Software of USA. The program was *Better Working Word Publisher*.

Unfortunately, *Better Working Word Publisher* didn't work better very much of the time at all, and the review I wrote way back in December for publication in the February issue was not favourable. In fact, there were so many problems evident that a copy was sent to the distributor for comment.

He was not very happy either and faxed it to Spinnaker in USA, whose initial response was that *Compute!* or *Compute's Gazette* (I forget which) had reviewed it quite favourably. Faced with conflicting reports, he set about trying to duplicate, with another copy of the program, the problems I had reported. Sad to say, he found them all with one exception, and that was because he used GEOS 64, while I used GEOS 128. That in itself is a bug, because GEOS applications are supposed to be upwardly compatible - that is, programs that run under an early version of GEOS are supposed to run under a later version. The GEOS system and its improvements have been designed to enable just that.

More communication between the distributor and Spinnaker, resulting in Spinnaker sending over a number of upgrades. According to the distributor, each of these introduced as many problems or more than it fixed.

While this was going on, I was feeling a little unhappy about the rather negative report I had written on the program and had another look at it, this time under GEOS 64. I confirmed the distributor's findings on the GEOS version bug and, far from being able to "ease up", found additional problems I had missed the first time around.

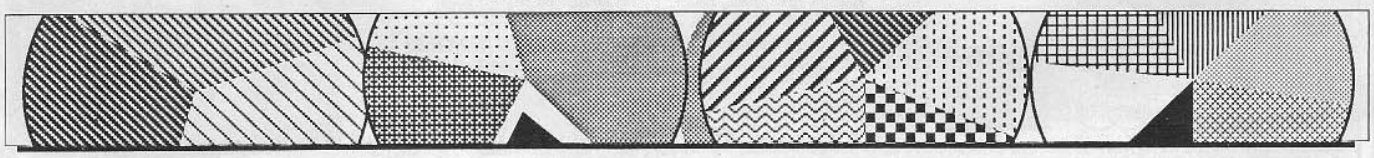
Many features, both those that work and those that don't, indicate regard for the needs of the user and a program with potential. *Word Publisher's* designers have obviously recognised deficiencies and areas for possible improvement in other GEOS-based word processors. I particularly liked the combined keyboard and mouse control of the whole program, the full set of editing keys, the fast text entry, the fast scrolling, and the fast dot-matrix draft mode and its options. Also, many of the wordprocessing tools omitted from the earlier versions of *GeoWrite* (up to v1.3) were available, such as headers, footers, super and subscripts, page numbers, full control of margins and indentation, search and replace, variable line spacing, etc. And the price was reasonable at $69.95 recommended retail.

However, there were too many problems. These are the ones that I identified:

- Spell checker too slow - 30 minutes for 3700 words.
- Spell checker would not work under GEOS 128.
- Spell checker could not be told to accept a word it didn't recognise.
- The dialogue box for entry to the spell checker had an EXIT option. When selected, this locked the computer and required a reset.
- Due to the file management system used, it is impossible to delete a whole page of text from a document. You can do it on the screen, but when you try to update the disk file, presto! - the text re-appears.
- Text doesn't cascade between pages. For example, if you delete a paragraph at the end of a page, the text in subsequent pages doesn't move up to fill the gap.
- You cannot import or export text from a *Word Publisher* document (even to or from another *Word Publisher* document) because there is no "block-read" or "block-write" facility and the GEOS Text Manager will not handle *Word Publisher* text.
- The print-to-disk option self cancels after about two and a half pages.
- The ASCII to CBM ASCII translator doesn't translate capital letters. The file names for the CBM ASCII files generated by this option are written in true ASCII, making them unreadable by non-GEOS programs. (The purpose of the option is to generate output readable by non-GEOS programs.)
- I could not place graphics in my *Word Publisher* document because the program kept asking me to put the GEOS Photo Manager onto the disk, even though it was there already.
- The review disk had a small sticker on it saying Vers 2.0. The file info from the GEOS Desktop said version 1.3.

As a result of all this the program is no longer being imported by the current Australian distributor of Spinnaker products, Pactronics, a fair and responsible decision for which they should be congratulated. Import and distribution of *Word Publisher* will resume when a properly de-bugged version is released.

You might think I'm cynical for saying this, but I don't believe that the publishers of any program could be unaware of so many faults. It makes me wonder why they sent it to us. ❑



HPD
HARDWARE
PERIPHERAL
DISTRIBUTORS

Faster than a Speeding Cartridge
More Powerful than a Turbo ROM
It's Fast, It's Compatible, It's . . .

JiffyDOS

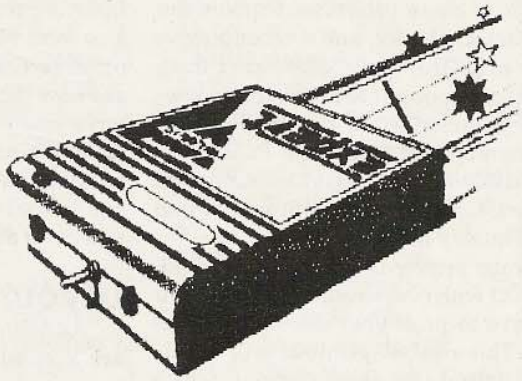
Compare features and see why JiffyDOS is far more than just another "Rapid" disk drive speed-enhancement system!

Features	Jiffy DOS	Rapi DOS
Leaves Cartridge and User Ports Open	YES	NO
Works with MODEMS and communications software	YES	NO
Requires additional cabling between computer & drives	NO	YES
Supports more than two disk drives	YES	NO
Simple ROM installation - no additional hardware	YES	NO
Extended DOS Wedge with 14 additional commands	YES	NO
Guaranteed compatible with all software & hardware	YES	NO
Load 202-blocks (stock 1541 - 126 seconds)	6	15
Save 202-blocks (stock 1541 - 150 seconds)	30	94
Format 35 tracks (stock 1541 - 90 seconds)	21	24
Read/Write PRG, SEQ, REL. USR files up to 15x faster	YES	?

JiffyDOS is available for C-64, 64C, SX-64, C-128 & C-128D (JiffyDOS/128 speeds up both 64 and 128 modes), and 1541, 1541C, 1541-II, 1571, 1581, FSD-1&2, MSD1&2, Excel 2001, Enhancer 2000 disk drives. System includes ROMs for computer and disk drive, stock/JiffyDOS switching system, illustrated step-by-step installation instructions, User's Manual, Money-Back Guarantee, & unlimited customer support.

NEW PRODUCT AVAILABLE SOON

Amiga Mini Amp	$64.95
Amiga Audio Digitiser	$99.00
Amiga Stereo Audio Digitiser	$125.00
Amiga Printlink	$89.90
C64 Diagnostic Cartridge	$54.95
C64 Drive Doctor 1541/1571	$42.95
C64 Datasette Doctor	$34.50
Datasette Backup Boards DCL1	$29.95
Expert Cartridge and utility disk	$115.00
Expert V3.2 utility disk	$12.95
Expert V3.2 system disk	$12.95
Expert V4.1 enhancement disk	$29.95
Expert V3.2R + Utility + V4.1R	$129.95



H.P.D & TRILOGIC PRODUCTS AVAILABLE FROM THE FOLLOWING DEALERS

IN S.A.
Computerman PH 08-3770818
Computerbits PH 087-259533
C.D. Computer Supplies PH 08-2341292
Palmer Computing PH 088-211714
Parafield TV Centre PH 08-3494991
Craigmore Computers PH 08-2559599

IN W.A.
Regional Computers PH 09-3289062

IN QLD
Computerview PH 07-2826233
P.C.B. Electronics PH 070-331217
Telair Electronics PH 075-312302
Futurelink PH 076-321955

IN VIC
Computer Magic PH 03-3260133
Maxwell Office Equipment PH 03-4196811
Westend Computers PH 03-3505144

IN N.S.W.
Karella Trading PH 049-458455
MicroComputer Spot PH 02-4177256
Prime Artifax PH 02-8170011
The Gamesman PH 5333055
The Logical Choice PH 069-215505

IN TAS
Angus & Robertson PH 002-344288

ALL DEALER ENQUIRIES WELCOME

Also phone for quote on repairs on all computers - Authorised Commcare Centre.
Money Orders and Cheques welcome or use your Bankcard, Mastercard or Visa.

● **HPD will make you the experts** ●

Mail your order to: **7/100 Hewittson Road**
Elizabeth West SA 5113

or phone your order now on (08)252 3300 Faxed orders (08) 252 4755
Add $3 Postage and Packing to all prices - For drives and printers add $10

VISA MasterCard

80 column desktop publishing

by Harry Waterworth

A COUPLE OF months ago, we looked at Berkeley's desktop publishing program, *geoPublish*, and the many features it offered users of both the Commodore 128 AND 64 computers. This month, however, we will look at two programs that, combined, create another excellent DTP (desktop publishing) utility, but this time, for 128 users solely. I refer to *Newsmaker 128* and *Spectrum 128*, both released by Free Spirit Software and both written by Dave Krohne.

Both of these programs support the 1750 Ram Expander, and a second drive (either a 1571 or the 1581). Apart from the preceding optional items, the following requirements are essential to run the programs:- an 80 column RGB monitor; a 128D with the 64K video ram chips installed; Commodore's 1351 mouse and a good quality printer.

If your printer is like mine, ie a Citizen 120D with 60dpi resolution, then you will have to print your documents sideways. This rotated printout will divide your printout into three sections, which you then simply paste together. Although this is an additional chore, the end result when you photocopy your document is no different to a conventional printout. Owners of 80 dpi printers don't have to worry about this.

If you do own a Commodore type 60dpi printer, the printout will also be stretched vertically due to the printer's lower density. Simply put, you will wind up with a longer page than the standard A4 size. You then have the option to either photocopy it onto legal size paper, or use a copier with a photo-reducing capability to get it back down to A4 size.

Newsmaker 128

Let me say first-up that *Newsmaker 128* is a basic DTP program that is capable of producing simple newsletters, advertising leaflets, posters, school projects etc, and all in an attractive fashion.

It doesn't have a lot of the 'youbeaut' features of some of the other DTP programs for the 128 or Amiga, but then again, it doesn't have the hefty price tag either. At around US$30.00, it represents good value for the bulk of us who don't require professional layouts for "Vogue" type magazines.

Now, having said that, let me also add that what it does have is the ability to use the 128 to its full capacity. It allows you to use the 80 column screen for both inserting text as well as viewing, and it also frees you from having to 'ZOOM' in on different parts of your document to see how things are progressing. You can write text directly into your columns as well as 'pour' text in from another file. In addition to these facilities, *Newsmaker 128* has a host of other features that we will cover as we go along.

Layout

As with most DTP programs, there are a number of prepared column layouts to use if you want to, but you are free to design any layout you wish. The opening screen presents you with a menu across the top of the screen with five selections:- Layout; Text Edit; Art Dept; Clip Art and Options.

Naturally, the layout menu is where you start to develop your document, and as mentioned, there are a number of readymade layouts if you want them.

Included in the layout menu are two features called Block Fill and Block Erase. They make it very easy to either fill in or clear large areas of your page in rapid time and are extremely handy functions. Moving your mouse along one space will put you into the Text Edit Menu. Here is where you can select your different fonts; change the size of the text; write directly to the screen, or pour in the files that you have already prepared.

You can store your work into the Ram disk at any time. This enables you to experiment a bit, and if you don't like your most recent change, you just recall the last saved version from the Ram disk and you're back in business again.

Artwork

The next menu is the Art department, and in here are the usual features found in most graphic programs. Although it doesn't have all of the fancier features of its sister programs *Sketchpad 128* and *Spectrum 128*, (it doesn't have to as you can import *Sketchpad* and *Spectrum* graphics directly into your document) there are enough tools to allow you to complete simple art work and tidy up any drawings you have imported.

A handy function is the pixel edit mode, which allows you to fine detail your work with great ease. Clip art is the next menu, and here you can import *Print Shop* graphics into your document, as well as the graphics created from the programs mentioned above. Also included in this menu are the cut; paste; reverse; mirror and flip options, all of which should be very familiar to regular users of art type programs.

The last menu is options and this is the utility area in which you can change your active drive from 8 or 9 and import graphics or layouts from your other work disks. It is also where you save your work to disk. Options is also where you set up your printer to get your hard copy.

Hints and tips

When you import graphics from *Sketchpad* or *Spectrum* into your page layout, there is no facility to enlarge or reduce the artwork. Also, when you bring your drawing in, it will automatically align the graphic page with the left side of your *Newsmaker* page. Therefore, if you want your drawing to appear in say

M.A.S.T. **Technical Excellence**

'The Matchbox Collection" - A POWERHOUSE OF PERIPHERALS

MASSIVE MASS STORAGE FOR THE AMIGA 500/1000/2000

Maybe you want the unrivalled FLEXIBILITY of TINY TIGER - our UNIQUE standalone SCSI system, compatible with all Amigas.
POWERUSERS may prefer FIREBALL for their Amiga 2000. This true DMA, DRIVE ON A CARD, is designed to burn the competition on **price** and **performance**.
All MAST hard drive systems utilize State Of The Art, 3.5" SCSI drive technology. Both TINY TIGER and FIREBALL include a BUDGET and PERFORMANCE PLUS line of drives.
The BUDGET range comprise Seagate 30 & 50 megabyte drives.
The PERFORMANCE PLUS range feature FUJITSU 3.5" SCSI mechanisms - an indication of the reliability you should expect from this product. Naturally as another quality MAST product, it is SMALL, LOW POWER and covered by our one year limited warranty.
PERFORMANCE PLUS drives are available in 45, 90, 135, and 180 megabyte configurations. They are voice coil, fast, and feature their own 24K byte RAM buffer for even faster access. The 45 meg mechanism is SUPERSMALL - at only 1" high it is the same size as our miniscule UNIDRIVE floppy.

TINY TIGER ™
THE PURR-FECT SCSI SYSTEM

IF YOU CAN PLUG IN A PRINTER THEN YOU ALREADY KNOW HOW TO INSTAL A TINY TIGER
- simple as that!

* includes SCSI interface, drive and power supply
  - all in one neat little case.
* Drive is preformatted with Workbench 1.3 installed
  - power on and away you go.
* Plugs into A500/A1000 and A2000
  - great if you upgrade and ideal for moving software from one computer to another.
* connects thru 8 bit printer port
  - a natural for SCSI - it's 8 bit as well.
* fast - sure is - try this:
  copy all of workbench 1.3 from RAM: to RAM: - you can't get much faster. It should take 22.5 secs. To do the same from Tiny Tiger to RAM: = 27.6 secs. IN REAL WORLD TESTS - TINY TIGER PERFORMS.
  - at lowest price per megabyte.
* printer is passed thru - transparently.
* pass thru for additional SCSI devices.
* TINY TIGER is attached by flexible cable and can be located in a convenient position
  - DOES NOT OBSTRUCT USE OF A500 KEYBOARD
* Bus expansion is left free for other important peripherals - like memory.

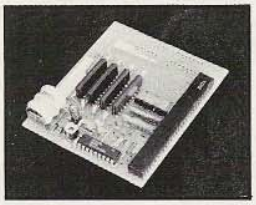
FIREBALL™
HARD DRIVE ON A CARD
FOR THE
AMIGA 2000

* SCSI INTERFACE AND DRIVE
* TRUE DMA
* AUTOBOOT
* VERY FAST
* LOW COST
* INDUSTRY STANDARD 50 way CONNECTOR ON SCSI PASSTHRU

CAPACITY	FIREBALL	T/TIGER
30 meg	$999.	$999.
50 meg	$1248.	$1295.
45 meg	$1245.	$1295.
90 meg	$1645.	$1695.
135 meg	$2045.	$2095.
180 meg	$2345.	$2395.

REMEMBER - T/T PLUGS INTO ALL AMIGAS FOR A CLEAN UPGRADE PATH - DON'T LIMIT YOURSELF
*** BUY TINY TIGER ***

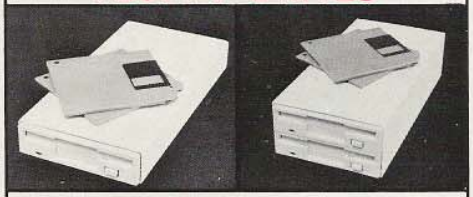
MICROMEGS™ - 512K RAM
AND BATTERY BACKED CLOCK



A500 only $249

This alternative to the A501 is only half the size and uses a fraction of the power - important for power conscious A500 owners.

THE ULTIMATE EXTERNAL FLOPPY DRIVES



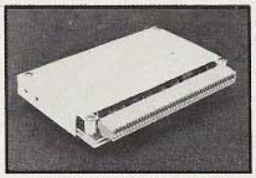
* SUPER SLIM LINE
* VERY LOW POWER
* NO CLICKING
* MAY BE SWITCH DISABLED (TWINDRIVE HAS TWO SWITCHES)
* QUALITY FUJITSU MECHANISM
* POWERED FROM AMIGA OR OPTIONALLY AVAILABLE PLUGPAK
* 1 YEAR LIMITED WARRANTY
* UPGRADE POLICY - BUY A UNIDRIVE AND HAVE IT FACTORY UPGRADED TO A TWINDRIVE ANY TIME
* REMOVABLE CABLE
* ROBUST BEIGE METAL CASING
* HINGED DUST COVER
* QUIET OPERATION

UNIDRIVE $199 TWINDRIVE $398

AMIGA 2000 OWNERS OUR NO-CLICK INTERNAL DRIVE IS A GREAT DEAL AT $199

MEMORY TO GO!
NEED MEMORY FOR YOUR A500/1000
TRY THIS - **MINIMEGS™**
2 MEGABYTES OF EXTERNAL RAM
IN A VERY SMALL PACKAGE

NEW LOW



PRICES

PHOTO OF A500 VERSION

* AUTO CONFIGURE
* LOW POWER
* 1 MEG DRAMs
* RAM TACHOMETER
* AUTOCONFIGURE LED
* VERY SMALL SIZE
* ZERO WAIT STATES
* COMPATIBLE WITH A501

512K $531 2 MEG $1227
1 MEG $763 (add $10 for all A1000 versions)

MAST PERFORMANCE PLUS HARD DRIVES AND ALL OUR FLOPPY DRIVES FEATURE FUJITSU MECHANISMS
FROM JAPAN'S LEADING COMPUTER COMPANY - QUALITY YOU CAN COUNT ON

M.A.S.T.erprint $3395
300 DPI
DESKTOP PAGE PRINTER

* FUJITSU ENGINE
* LED TECHNOLOGY for increased reliability
* SMALL FOOTPRINT - only 16.5" by 16.5"
* DUAL PAPER FEEDER
* HP-PLUS ™ COMPATIBLE

M.A.S.T.erprint PS $6495
This is the POSTSCRIPT™ version of the page printer. It has 35 fonts and 2 megabytes of RAM (optional 4 meg). Addiitional Postscript fonts can be plugged into the printer.
IMPORTANT: MASTERprint can be upgraded to MASTerprint PS anytime - lets you save up for Postscript.

MEMORY & STORAGE TECHNOLOGY INC

M.A.S.T. U.S.A.
3881-E Benatar Way
Chico, CA 95928
(916) 342-6278

M.A.S.T. U.K.
Unit 1, Dippen Brodick,
Arran, Scotland KA 278RN
(077082)234

M.A.S.T. AUSTRALIA
178 Pacific Highway
St Leonards NSW 2065
(Ph: (02) 436 2600

AMIGA, A500, A501, A1000, A2000, Fujitsu, HP+ and Postscript are trademarks of their respective companies. All prices and specifications subject to change without notice.

the right side of your layout page, then that is where you must draw your art in your graphics package. It's easier to do than explain, and after a couple of tries, you will soon master the trick.

That about wraps up *Newsmaker 128*. It is great to see an 80 column DTP program for the 128, and although it took me a few sessions to get the hang of some of the features, like the old saying goes, practice makes perfect.

I've saved the best one till last, and I'm referring of course to:-

Spectrum 128

This is the sort of program that must worry Commodore executives in their push to get us all to shelve our 128's and buy their Amiga. The one area in which the 128D could not match the Amiga was in the area of colours and graphics. Now, along comes a program called *Spectrum 128* which gives all of us 128 users another 128 colours on top of the normal 16 colours available. That's a total of 144 colours.

Nobody would pretend it matches the 4092 colours of the Amiga (how many shades of red do you really need), or provides a lot of the Amiga graphic techniques. However, I would suggest that unless you are professionally involved in graphic arts, the features of *Spectrum* will be more than adequate for 99% of 128 owners who are into colour art for their computer.

As with *Newsmaker*, *Spectrum* is written in Basic 8 and the extra 128 colours are made possible by a process called colour dithering. I must confess that no other graphic program I have reviewed has created such an initial "WOW" type impact. So, without more ado, let's take a closer look at the program.

As with *Newsmaker*, *Spectrum's* menus are at the top of your screen, and again, you have five selections:- Paint; Shapes; Solids; Tools and Extras.

Let's paint

When you select paint, the drop down menu gives you a further eight options.

The first is simply paint, which gives you a choice of the standard 16 colours to use by holding down the mouse button and using the chosen colour to draw onto the screen.

The next two options, airbrush and mirror, also allow the use of the normal 16 colours for the 128.

The following option, MULTI-COLOUR is where the fun really starts. Here, you are presented with the choice of 128 colours from the colour palette provided. Using this function allows you to paint with a small coloured block, and you can paint in this mode with no colour bleed at all.

Likewise, the next option, Block Fill also gives you the same palette with 128 colours.

The next feature, Block Erase, is one of the most important features in the whole program. This option sets every pixel in a given rectangular area to a new background colour. This in turn creates a small drawing screen in your picture. In the accompanying manual, the author Dave Krohne explains the importance of this function and how to best use it to get the optimum results with your works of art.

The last two options in this category are Erasers and Clear Screen. Erasers gives you a choice of four erasers to use, but there are a couple of limitations to keep in mind when using this function. Again, they are fully explained in the manual. Clear screen allows you to choose a new screen colour to use as a background, but keep in mind that using this function will erase the entire current screen you are using.

Shapes

The next menu is Shapes, and here is where you will find the standard features that are available in most graphic program. Dots; single lines; continuous lines; rays; boxes and circles are all found here. One different feature is Polygons, for here, you are given the choice to create polygons ranging from a three sided triangle to a twelve sided dodecagon.

Preferences is the last choice in this section, and this category allows you to set the thickness of your lines, circles etc. It also provides options for multi-height drawings; unplot functions for showing vertexes and last iterations of multi-height shapes.

Next comes Solids, and this section allows you to create spheres; cylinders; spools and doughnuts. It also allows you to view the shapes from different perspectives. As with *Sketchpad 128*, you can elect to have two options for shading, either textured or halftone. The latter provides a smoother finished product, whilst the former gives a more rugged look to the finished object.

Tools

Again, the normal features of cut; paste and fill are included here. The

'Write' function is also in this menu, and you may select any colour you wish to write in. "Edit Colours" is also in this section, and this allows you to colour black and white pictures from *Sketchpad 128* graphics, as well as your *Print Shop* graphics. Pixel Edit is also available, and this has already been outlined in *Newsmaker 128*. However, as this is a colour program, bear in mind that you may affect other colour cells when you use this function.

Included also in the tools menu is a feature called 'Slideshow'. As the name implies, it enables you to view all of the pictures you have stored on your disk in slideshow format, with different fade-outs as you go from one picture to the next.

The last item in the tools menu is modifications, and this is split into two sections, text and graphics. In the text area, you can adjust font sizes on the X and Y axis to achieve tall thin fonts, or conversely, short fat fonts. As well, both your text and graphics can be rotated; flipped; mirrored or reversed by the orientation option.

Extras

The final menu is Extras, and it is here that you can select your active drive; load existing files from your work disks and save your current screen to disk.

You can also make excellent use of the speed available in your Ram Expander by storing work to ram, then using the fetch option for quick retrieval to make any required modifications. Finally, extras is where you set up your printer details to get your hard copy. Like *Newsmaker*, you will have to rotate the printout if you have a 60DPI printer, however, there is no need for any pasting, as the full screen is printed in the one pass.

As was the case with *Newsmaker*, it took me a few goes to get used to *Spectrum 128*, but the more I used the program and became familiar with its workings and techniques, the more impressed I became. The crispness of the 80 column graphics alone from the use of the 64K video ram chips is something to see, but when you add to that the extra 128 colours available, you wind up with a graphics program in a league of its own for the 128D. All in all, a program that will provide you with endless hours of creative fun. See you next month. ❑

Review copies provided by Briwall Australia, PO Box 9, Rivett, ACT 2611.

★★★★★ C64/128 & Amiga Progam Disks at JUST $5.00 EACH! ★★★★★

Commodore & Amiga Software Club

At last a Software Club that caters specifically for the Commodore user with thousands of excellent quality Public Domain & Shareware programs for both the C64/128 and Amiga. Your membership fee of just $50.00 per year will make available to you a vast array of great programs from GAMES to EDUCATIONAL to UTILITIES to GRAPHICS & SOUND to BUSINESS to COMMUNICATIONS and everything in between, and the list is growing continually! At just $5.00 per disk you would say that was a pretty good deal, right? Well read on ...

YOU BENEFIT 8 FANTASTIC WAYS!

1. Free and automatic membership to the exclusive Island Bulletin Board system. (03) 742 3993
2. Catalog Disk listing all currently available progams.
3. Magazine on a disk keeping you up to date with news and views from the world of Commodore.
4. Hardware & Software specials at super special prices to Club Members!
5. Access to the ISLAND Database on Viatel if you have Viatel membership. (Node 66697)
6. All orders are GUARANTEED to be shipped within 48 business hours.
7. Your exclusive Island Software Club Membership Card.
8. Exclusive membership to the most progressive Software Club around!

Why not join in this most exciting venture right now?! Just fill in and send the order form below using our FREEPOST address, and we'll have your membership in the post to you. If you require further information, then write to me personally, Ross Skinner, at the same address or call on (03) 741 9981. We'll be waiting to hear from you!

ISLAND SOFTWARE CLUB MEMBERSHIP

send to: Island Software Club
FREEPOST 49
P.O. Box 381
Werribee VIC 3030

Yes, please enroll me right away for my 12 month membership at just $50.00
Name:_____
No & Street_____City/Town:_____
State:_____Post Code:_____
Phone: (___)_____Computer: C64(_)C128(_) Amiga(_)
Payment Type: Bankcard (_) Mastercard (_) Visa (_) Amex (_)
Diners (_) Cheque (_) M/Order (_)
Card # (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_) (_)
Expiry Date:__/__/__ Todays Date:__/__/__
Card Holders Signature:_____
Cheques & Money Orders should be made payable to: ISLAND BY MAIL.

User port connections

by Mario Annetta

This article concerns using your Commodore 64 to control other electrical devices, such as a heater or a video recorder. In fact, I'll start off with a little story about how (and why) I connected my computer to my video.

I have an old video recorder which you can program to record while you are away, but it can only be set to record one program. Being a TV fanatic, I sometimes wanted to record more than one television show while I was at work, but that was not possible using this video's limited programming. That's when I decided to get a friend to manually switch on the video. The friend of course is my Commodore 64.

I am now able to record any number of TV programs that I want while I am away, through a small program that I wrote for the computer. The program allows me to input the current time, and the starting and ending times for the shows that I want to record. The computer uses its inbuilt clock, and the information that I inputted, to determine the right time to start and stop the video, and also change it to the right channel.

The connection is made from the computer's user port to the video's remote control input socket via an interface that I built. My video uses one of the old corded remote controls, making a wire connection to its socket much easier than if it had been the infrared type.

The exact specifications of my interface are not important here, since it will only work on my specific brand of video recorder. However, I would like to explain some of the basic principles of connecting different devides to the computer's user port.

The user port (the long one directly next to the cassette port) can be looked at as a set of eight 5 volt switches that you can program to individually switch on and off. This switching can be simply done in Basic as I'll explain later, but let's now look at another example of what use you can make of it.

One of the easiest things to control is a device that simply needs to switch on and off, such as an electric heater. If it runs off a 240 volt power supply, then it won't get its power directly from the computer, but the computer's 5 volt output can operate a relay which switches on the 240 volt power to the heater. The switching on and off of the heater would be set to a specific time that you program into the computer.

I should mention that the user port can also input signals from other devices, so a thermostat telling the computer when the room is cold would complement this setup nicely.

The controlling of a heater is not a very exciting task for your computer to perform, but an understanding of how it is achieved will provide you with the basic knowledge to go on to more complex projects, such as constructing a robot. Let's look at how a connection to the user port is made. Instead of a heater, we'll use a simple example of a small light bulb powered directly from the computer.

You will need a 24 pin edge connector to connect the light bulb to the user port. These can be hard to get, but I have seen them at Rod Irving Electronics in Melbourne. If you look at the back of the computer, you will see that the user port has two rows of 12 pins. We will ignore the top row, as none of those pins are needed here. On the bottom row, the first pin on the left is the ground connection. We will ignore the second pin, but the third through to the tenth pins are the eight control lines that interest us. These eight pins can each supply 5 volts DC when connected to the ground pin. We will only use the first of these in this example.

A connection is simply made from the first control pin (third from the left on the user port) to the light bulb, and back to the ground pin on the user port. You may need to add a resistor in this circuit depending on the specifications of the bulb. You can then program the control pin to switch its 5 volt supply on or off, in turn causing the bulb to switch on or off.

The control line pins are turned on in Basic simply by POKEing two memory locations. The first location is 56579. You should POKE it with 255 to set the user port for output. As I mentioned previously, the user port can also be set for input, and this is done by POKEing 56579 with zero. But for now we'll concentrate on output. You only need to set this location once at the beginning of your program.

The second location to know about is 56577. This is the location that actually turns the individual control lines on or off, depending on how the individual bits are set. For example, bit one controls line one, so POKE 56577,1 will switch line one on, causing the bulb to glow. POKE 56577,0 will set all the control lines to 6 volts, so the bulb will stop glowing. The bulb will also stop glowing if you use POKE 56577,254 because this will turn on all the control lines except the first one.

Now you should have a basic idea of how to harness the user port's power. Eight switches will allow you to connect eight light bulbs, or, through relays, eight electric motors. The eight motors could operate several toy cars, or an automated machine used in a factory, or maybe a complex robot.

You shouldn't go connecting things up to the computer unless you know something about electronics or you could damage it. In particular, you should not connect any of the user port pins directly to a high voltage. If you would like to experiment safely, I suggest you get an excellent book from Compute Publications called *Electronic Computer Projects* written by Soori Sivakumaran. When you complete your first computer controlled walking talking robot, be sure to bring him along to your local Commodore 64 user group to amaze all the members. ❑

Tasword Commodore 64 Wordprocessing

by Andrew Farrell

If you're new to wordprocessing, Tasword is packed with helpful features. Easy Script fans will find some of the features familiar, but if you're into mice and pointers, stick to GEOS. Tasword can edit up to 300 lines of text, in either 40 or 80 columns using a scrolling window. Commands are all accessed via the function keys or combinations of the CTRL key or shift keys and other characters.

This method may seem a little antiquated at first, but once you are familiar with the various keystrokes, it quickly becomes second nature. I find on the more advanced programs with pull down menus that eventually it is much faster to use the key board equivalents as they are much faster.

The F3 key brings up a number of help screen summerising all the various control keys. A very useful feature that should be in every program. There's also a tutor file to take you through the ropes.

On screen, Tasword word-wrap your text automatically, keeping everything easy to read. This can be over-ridden if desired. The line can also be justified - so the left and right columns are flush just like this magazine.

Once the program is loaded, you can customise the setup, and then save a new version to disk or tape. Options you can set include colours, cursor details, and printer and storage device. One glitch we ran into was in saving a file by the same name. Tasword will not overwrite an existing file - which is a good thing. But, if you save to an old file, no warning is given that a save did not take place. You switch off and walk away after seeing the drive whir, thinking all is well. You come back later and whammo all is lost. Not too well designed.

Your page layout can be altered considerably, and there's a fair amount of control over your printer. Headers and footers are available, and text styles such as italics and bold can be set easily. If the codes do not match your printer, they can be changed. The manual is clear, but lacks an index. The contents page almost makes up for that.

Overall, Tasword, although a little old fashioned, is a reasonably good wordprocessor for beginners with plenty of power to spare. I would not recommend it for serious use, or if you need to save your text as ASCII. ❑

Our review copy came from Dolphin Computers

ANTIC'S

AMIGA plus

MAGAZINE™

$19.95 INCLUDES DISK WITH EACH ISSUE.

WILL

ADD to your creative powers with "how-it-was-done" articles on the best graphics and animation.

IMPROVE your skills with step-by-step programming tutorials by professional Amiga authors.

LET YOU

LEARN about the latest Amiga product developments, and the people behind them.

UTILIZE the disk to get the full benefits of the numerous programs and games covered in the magazine.

ADVERTISING, DISTRIBUTION & SALES ENQUIRIES TO:-

COMPUTERMATE™
products (australia) pty. ltd.

PHONE: (02) 457 8118 9 HIGH STREET, MT. KURING-GAI 2080. **FAX: (02) 457 8739**

Professional DataRetrieve

byPhil Campbell

Sick of SuperBase? dPressed by dBase? Phil Campbell thinks Professional DataRetrieve might just be the database you've been waiting for.

Designed and built by Data Becker, the German software house responsible for the *BeckerText* Wordprocessor, *Professional DataRetrieve* has been a pleasant surprise.

It is loaded with features, it's fast, and above all it is incredibly easy to set up. You can have a new database set up with customised screen templates and printer forms in less than half an hour - much less. Fancy features like relational fields may take a bit more messing around - I haven't needed them yet - but if they're as easy as everything else then there shouldn't be any problem.

Features

a) User Interface

Professional DataRetrieve makes full use of the Amiga User interface - in other words, all commands can be entered by clicking on icons with the mouse pointer. A set of pull down menus is also available, but most commands here simply duplicate the pictorial commands on the icon strip running down the side of the screen.

The Amiga clip-board is well supported - data "cut" from anywhere in your database is stored here until required, either by *Professional DataRetrieve* or another program. Wordprocessors like *Scribble*! multi-task with the database beautifully, making it easy to cut and paste information back and forth.

b) Template Design

Professional DataRetrieve is a "mask oriented" database - in other words, data is entered and organised on the equivalent of a blank "form" which appears on your screen. Like any form - say, for example, a deposit slip at the bank - there must be blank spaces for filling in the required information, like your name, account number and other particulars.

So, before you can enter and store any data, you must design your form. What information do you intend to store? Where do you want it to appear on the screen? How much space should you leave for each item? All important questions. Some programs make this phase of database design a real headache - at the very least you may need pencil, paper and a calculator to plan your screen layout. Not so with *Professional DataRetrieve*.

A few clicks and swishes with your mouse and the screen is full of boxes ready for your data. Not big enough? Just click and stretch. Usually, you will need some text to describe each data field. No problem. Point and click where you want your headings or titles, and type what you want to say. Professional DataRetrieve provides a number of fancy fonts too, like Headline and Script, which can be used to add class to your forms. These fonts are good - I often use them with other programs. Boxes, circles and lines can be added to your screen. These are practical as well as pretty. They let you group your data-fields together in a logical way on your form, or highlight important information.

Each data-field - the blank spaces on your form - can be set to accept certain types of data. TEXT, DATE, TIME, NUMBER, IFF and CHOICE fields may be specified. Most are self explanatory. The IFF field is reserved for the names of external IFF graphic files, the CHOICE field limits the user to a range of preset answers, like YES/NO or MALE/ FEMALE.

These features are useful, though the date field follows the annoying American convention of MM-DD-YY. Even more annoying is the fact that the examples in the manual use May 5th, 1988 as a sample date. This, of course, appears as 05-05-88 and just adds to the confusion.

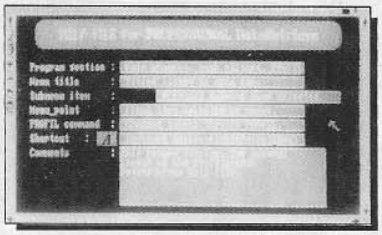
Even so, my first database was designed within 15 minutes. It was easy, and best of all, it was easy to modify after I had tried it out. It is not unusual to enter 50 or 60 clients on your database and then realise you should have included a place for the "Wife's Birthday" or - if you work for the public service - "Grandmother's Wedding Date." After all, you never know when you will need to know. *Professional DataRetrieve* forms are easily modified on the hop.

In use

Data access is fast - certainly much quicker than the original version of *Superbase*. I have not compared it with *Superbase II*. Searching and sorting is a breeze, and there is a neat "Index" feature which allows you to scroll through the "Index" fields on each data record - just like flicking through a card index box. Here's an example. So far, I have entered over 200 names and addresses into a fairly complex address book file. There is plenty of room for more. I have sorted them alphabetically, indexed on last names - just like a phone book. I need to find a phone number - Woods, D.

I can either search through the file for the appropriate "form," which is a little time consuming, or call up the index. This is quicker. A list of names in my database appears on the screen, I scroll down to the "W" section, click on "Woods," and the information I need is on the screen in a flash.

I have not even touched most of the advanced features of *Professional DataRetrieve*. Relational files, for example, let you connect information fields between databases - the entry for "Woods"



in my address file could be linked to an invoice file. As I dial his number, I could instantly check on how much he owes me.

Professional DataRetrieve also includes a fully featured database programming language called PROFIL. There are more than 200 BASIC-like commands and functions which can be used to write your own applications or command sequences. Your programs can even be compiled for professional results. With *Professional DataRetrieve*, the sky is the limit.

Conclusion

I am more than impressed with *Professional DataRetrieve*. In fact, it's one of those programs you will keep inventing new reasons to use. And that, as far as I can see, is the acid test for any database. Often, an exercise book and a blue biro is a much simpler and more cost effective method of organising data. But, for me at least, *Professional DataRetrieve* is the database that has broken down that barrier - it's quick, it's efficient, and above all it is very easy to use.

Our review copy from Pactronics (02) 407 0261. RRP $299.00

MEGADISC

for the *AMIGA*
INFORMATION AND ENTERTAINMENT
LEARN HOW TO REALLY USE YOUR *AMIGA*

11 Disk Magazine Issues available

ASK FOR THE FREE CATALOGUE - ON - DISK

ALL issues of MEGADISC contain the information you need to make the most of your Amiga. Designed to be easy to use, all you have to know is how to click on the mouse buttons. Every issue is packed with original, not second-hand, information - articles, tutorials, reviews, free utilities, illustrations, where and how to get the hardware and software you need, along with the latest updates locally and overseas. With MEGADISC, you learn as you use, and you'll like learning. MEGADISC explains from the beginning, and entertains to the end!

Special offer!

Order MEGADISC 1-10, Catalogue-on-disk and
3 free Public Domain Disks for $140!
(You can order your 3 PD disks later.)

BEGINNER'S PACK - 3 DISK SET
containing:
Best of MEGADISC, Best of PD Utilities, Best of Graphics and Games,
in ***special disk box*** for $29

MEGADOS

AmigaDos Manual-on-disk,
with all you need to know about CLI, Workbench, 1.2, 1.3 and ARP and much more
$19.95
Price for current subscribers
$13.95

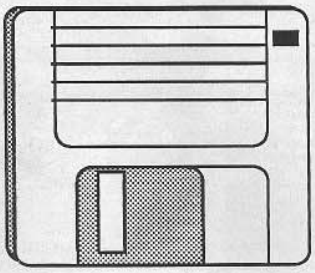
650 PUBLIC DOMAIN DISKS FOR $5.50 each, $5 for subscribers
All these disks are fully described on the free Catalogue-on-Disk
PD 10-Pack (10 selected PD disks in handy plastic box) $55
GET OUR 'GAMES PACK' - 10 Disks full of Games in plastic box - $55
3 Disk Animation Set $15 - AntiVirus Disk $5.50

WE DO NOT CHARGE FOR POST AND PACKAGING
All orders processed within 48 hours
WE ALSO TAKE BANKCARD, MASTERCARD and VISA ORDERS BY PHONE OR FAX
CONTRIBUTIONS OF ANY KIND ARE MOST WELCOME - PLEASE CALL
*PLEASE ENQUIRE ABOUT OUR **DESKTOP PUBLISHING** SERVICE*

I enclose a Cheque/Money Order for ..... or please charge my Creditcard
Mastercard/Bankcard/Visa No: ..... Exp: .....
Please send me: Catalogue-on-Disk AT NO COST: .....
ANY 6 issues of MEGADISC for $90 (please specify): .....
ANY 3 issues of MEGADISC for $50 (please specify): .....
MEGADISC 1-10 for $140: .....
The 4 free PD disks I want (2 in the case of a 3-issue sub) are: .....
OR please send your Catalogue-on-Disk now and I will choose the remaining disks later: .....
10-DISK GAMES PACK in box for $55: .....PD 10-Pack in box for $55 .....
BEGINNER'S PACK (3 DISK SET for $29) .....
MEGADOS *AMIGA DOS MANUAL-ON-DISK* FOR $19.95.....FOR CURRENT SUBSCRIBERS $13.95 .....
3 DISK ANIMATION SET for $15 ..... ANTIVIRUS DISK for $5.50 .....
Signature: _____
Name: _____
Address: _____
Postcode: _____ Telephone: _____ Date: _____

Send to: MEGADISC, P O BOX 759, Crows Nest 2065.
Telephone: (02) 959 3692 (all hours) FAX: (02) 959 3525

Program Protection



by Shannon Rowe

Have you ever made a program containing some routines you were particularly proud of? Chances are that you wanted to protect those routines from the prying eyes of less skilled programmers but didn't know how to. This article should set you on your way in the field of software protection. Firstly, we need to realise just what it is we are trying to achieve. Take an average BASIC program for example. In this program, it is a simple matter to break out and list the routines by pressing either STOP or both STOP and RESTORE.

This returns the computer to BASIC where the program is easily listed. To prevent the user from breaking out using these methods, a simple POKE 808, 225 should solve the problem. This poke can be included anywhere in the program, or in an M/C program, and when encountered, the computer disables both methods shown above.

Used as the first line of a program, it is usually a good prevention technique. However, it does have its flaws. Firstly, the program can be listed before it is run, meaning that the poke is useless unless the program autoruns. Secondly, the program can still be reset from inside the program by using a reset switch, and the program then 'UN-NEW'ed and listed (or disassembled for an M/C program).

Thirdly, the program may encounter an error and return to BASIC of its own accord in an accidental situation unforeseen by the programmer. This last problem is easily enough solved by replacing the POKE 808, 225 with a POKE 808, 234.

This last poke has the added advantage of also disabling the LIST command as well as the STOP and RESTORE combination, effectively solving that problem. To restore the computer to its normal state, a simple POKE 808, 237 will re-enable both LIST and the STOP and RESTORE breaks for both pokes.

The prevention against reset switches is a little more difficult. To explain the situation, think of the RESET routine at location 64738. When the reset switch is touched on pins 1 and 3 of the user port, the computer is signalled to jump to this location. This is the same as doing an SYS 64738.

Unfortunately, this location is in ROM and cannot be changed. However, during the process, the computer checks a location in RAM to see if a cartridge is in place. We can fool the computer into thinking a cartridge is there, and in doing so, halt the reset routine and transfer the computer to our own routine. This RAM location is at 32768 (or $8000 hex).

The computer checks to see if the ASCII values for 'CBM80' are stored in the locations from $8002. If the letters are there, the computer thinks a cartridge is in place and jumps to the routine pointed to by the values in 32768 and 32769. If we can set up a routine that pokes the values required into place then we have solved the problem.

Type in LISTING 1 and save it for future use. When RUN, this small program pokes in a routine at 32768 which stores the ASCII values and sets the jump to continue just after the ASCII characters. This area in which our own routine is stored is from location 32777 onwards. Just slot your own routine in here and this will be executed after the reset is attempted. The routine provided blacks out the screen and results in an inescapable lockup. That should teach those prying hackers!

Although this routine will not stop the 'unstoppable' reset switches on cartridges such as The Freeze Machine and the like, it will stop the casual user from breaking into your BASIC or M/C programs.

For use in BASIC programs, just include the listing as a subroutine and GOSUB the routine at the start of your program and the code will be poked into memory. No SYS call is required. M/C users can either relocate it into its correct area from elsewhere, or simply leave it where it is if your program is nearby in memory.

Now that we have solved that problem, we come up against our old enemy - the fact that none of these tips work unless the program autoruns. An autorunning program is one that runs as soon as it has loaded. Not only does this protect against unauthorised listing but it also looks more professional.

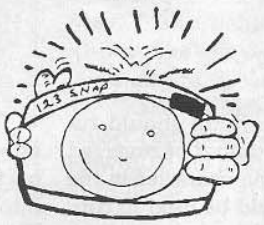
There are many autorunning systems - those that incorporate 'Load-a-games', those with music or loading screens, those that boot fastloaders, etc. What we have here is a fairly simple autorun technique that clears the screen as the program loads. This technique is an old favourite and simply involves altering a few memory locations just under screen memory. These registers are the ones that tell BASIC where to go after the program has loaded.

If we tell it to go to our program instead of back to BASIC, then our program will autorun. Of course, since the space between these registers and the program happens to be screen memory, the screen will have to be loaded again. We can use this opportunity to clear the screen, or draw loading screens, and this will appear on the screen as the program loads.

Unfortunately for M/C users, this program will only work for routines that either poke into place from a BASIC program or begin with an SYS call on a BASIC line.

Type in LISTING 2 and save it for future use. The program simply asks for the file to be converted and the new name for the converted file. Since there is a lot of data to be transferred between the two files, the program may take a long time - particularly with large programs - so be patient. The time taken

Prints or Slides Of Your Own Pictures on Amiga or C64.



Send in a disk with the picture in IFF format, a note on the program used to generate it and in TEN DAYS receive a 6x4 glossy, or satin print or 35mm slides of your picture. Most cover and many inside photos in this magazine taken by us.

Enlargements - up to Poster Size Available on application

Cost: $8.50 ea for 1-5 prints
$6.50 ea for 6-10 prints
$4.90 ea for 11 or more

call BH 018 230 912 or 02 817 2509 AH

Commodore computer PCB exchange service

◆ Same day certified mail despatch ◆
◆ Three months warranty cover ◆
◆ Re-assembly instructions included ◆

Commodore Vic 20, C16, Plus 4 $49

Commodore C64, 64C $99

- Simply remove your faulty board from its casing
- Your board must be complete and in serviceable condition.
- Forward your securely packed board together with your remittance to:

Parcom PTY. LTD.
Whites Hill Shopping Village
Samuel Street
Camp Hill, QLD, 4152
Phone (07) 395 2211

BANKCARD/MASTERCARD/CHEQUE/POSTAL ORDER

NAME.....

ADDRESS.....

PHONE.....PC.....

PAY BY CHEQUE..... B/C..... M/C..... Postal Order.....

CARD NO.....

EXPIRY DATE .....

SIGNATURE.....DATE.....

can be from just under a minute to up to ten minutes and more! So be patient and have a cuppa while you wait. The screen is filled with blank spaces, although you can change this yourself if you wish. When the conversion has been completed, load your new program and marvel...

Now you know how to prevent hackers from breaking into your programs to steal your hard work. By judicious use of all three tips, you should be safe. To con-

MICRO ACCESSORIES of S.A.

MANUFACTURERS & DISTRIBUTORS OF COMPUTER HARDWARE & SOFTWARE

DISK DISECTOR	$54.95	FREEZE MACHINE	$99.00
		EXPERT CARTRIDGE	$108.00
DOLPHIN COPY	$33.00	EXPERT CARTRIDGE + U/D	$135.00
DOUBLE IMAGE II	$54.95	QUICKDISK + MK II	$54.95
DATASETTE DOCTOR	$34.50	GRAPHICS UTILITY	$65.90
EXPERT V 3.2 U/D	$24.95	FREEZE FRAME 3B	$65.00
EXPERT V 3.2 S/D	$24.95	RESET CARTRIDGE	$12.95
FREEZE MACHINE U/D	$24.95	EXCELERATOR DOS	$199.00
FREEZE FRAME U/D	$24.95	DOLPHIN DOS	$169.00
EXPERT V 4.1R E/D	$29.95	TURBO ROM	$44.00
HARDWARE/DRIVES		**HARDWARE/MISC**	
EXELERATOR + PLUS	$299.00	SLIMLINE CASE	$19.95
AMIGA 3.5	$299.00	ANTI KNOCK	$14.95
AMIGA 5/25 MASTER	$399.00	USERPORT EXP. CARD	$33.00
AMIGA 500 EXTERNAL	$55.00	C64 KERNAL	$9.50
DRIVE BOOT SWITCH		PARALLEL CABLE	$32.95

UNIT 8 HEWITTSON RD, ELIZABETH WEST, SOUTH AUSTRALIA 5113
Telephone: (08) 287 0191 **Facsimile: (08) 287 1241**

clude, here are some final tips.

For BASIC users who would prefer an alternative method to protecting their program, here is a simple routine that can be stored as part of the program. Just type in LISTING 3 as part of the program, making sure that the first few lines are the first lines in the program. When the program is completed, GOSUB 63000 and your program should be protected. What it does is disguise the program as an M/C program in that an SYS call is the only line shown. When RUN, the program runs as normal. The SYS is merely a front that hides the BASIC program in memory until the program is RUN. This is a good method also, and should be used with the other methods to provide a more complete protection scheme.

Also for BASIC users, a few strategically placed REM's inserted after important lines should protect individual lines from scrutiny. The REM's take the form of REM"<a lot of reversed T's>":REM<shifted L>. The reversed T's are generated by typing two quotes after the REM, deleting one, holding down SHIFT and DELETE for a while, and then taking your finger off the SHIFT key.

Repeated use of this tip should result in the required number of reversed T's. Each 'T' deletes one character in the line, and enough should be used to conceal the line. The REM<shifted L> is peculiar in that it breaks the listing. This can be used anywhere in the program, but it is fairly easy to remove, although it can be a nuisance to hackers! Judicious use of these REM's throughout your program could also aid you in protecting your software. These tips are best used in small routines that you don't wish to use the other tips on.

One final word for M/C users. If you want the best protection for your program, make the NMI (Non Maskable Interrupt) an integral part of your program. NMI can be used to do many things the normal interrupts are made to do - joystick polling, interrupt driven music, etc.

All it needs is a little prodding from the normal interrupt routine. NMI can be really useful in running extra interrupts when the normal interrupt routine is already too full to use. Just set it at the required time from within the normal interrupt, and it will carry out its function.

This is really advanced programming however, and should only be attempted by those in the know. Where it comes into protection however, is in the fact that just about every hacking cartridge relies on the NMI not being used. If the NMI is used by your program, even though the cartridge may still be able to break out of your program, if the NMI is an integral part of your program, the hacker will not be able to crack it as the NMI routine has been destroyed by the hacker's cartridge! Unfortunately for beginners, this is extremely complex to do.

I hope you have learned something from this article, and that you are now safe in the knowledge that your prized programs are secure.

One word of note : I am currently running a "Programmers' Assistance" service. If you come across any major stumbling blocks on the C64, send a detailed description of the problem and a Stamped Addressed Envelope to :

Mr. Shannon Rowe.
136 Heathmont Rd.,
Heathmont. Vic. 3135.

and I'll see what I can do. Bye for now!

Australian Commodore and Amiga Review

Commodore Annual 1989

It's got the lot: ✦Disk drives ✦ Word processing ✦ EasyScript tutorial ✦ Graphics ✦ Communications ✦Desktop Publishing ✦Geos ✦ Basic ✦Machine Code ✦ User Groups ✦ Monster Software Guide

All Australian

Cut out order and send to **Gareth Powell Publishing 21 Darley Road, Randwick, 2031**

Name.....

Address.....

.....Postcode.....

Cheque.....Bankcard.....No.....Exp.....

Please Send me ..... Copies of Commodore Annual 1989 at a cost of $5.95 each plus $1.00 P. & P.

Would you rather keep pace?

Or keep ahead.

The reviews of the Amiga 2000 have been overwhelming in their praise.

Rightly so.

Its major features are tailored to keep you a jump ahead of the business pack.

The premier feature is undoubtedly multitasking. This lets you run virtually unlimited programs simultaneously.

Documents, presentations and the like are quicker to prepare and more impressive in their appearance.

Full colour graphics – 4096 colour shades – boost your impact, on screen and on paper.

Amiga's internal expansion ability shows all concerned that you make sensible investments.

Future additions are accommodated within the system easily and economically. More power and greater capability.

Should you need to be MS-DOS compatible, perhaps for working at home, Amiga is capable of running both Operating Systems. A very simple expansion.

65,000 Amigas have been sold in Australia. 850,000 Amigas worldwide.

Accordingly, the software collection for Amiga is as diverse as it is numerous.

Titles like WordPerfect, Professional Page, MaxiPlan, KindWords and Superbase.

A strong business and graphics package for building a stronger business. More are being added.

This is a computer with a career.

Having read this far, you're obviously interested in keeping ahead.

So, as an introduction to Amiga's possibilities, your Commodore dealer will give you the software you need to begin powering ahead.

Smart business people are guiding their future with Amiga.

AMIGA 2000 from Commodore

S M A R T E R.

FOR FURTHER INFORMATION SEE YOUR LOCAL DEALERSHIP

Amiga, Amiga DOS, Workbench and Kickstart are trademarks of Commodore Amiga Inc. IBM PC is a registered trademark of International Business Machines Inc. Microsoft and MS-DOS (Microsoft) are trademarks of Microsoft Corporation. Specifications are subject to change without notification.

JSA COM 0281

Listing 1 - Anti-reset

```
2000 forl=0to2:cx=0:ford=0to15:reada:cx=cx+a:poke32768+1*16+d,a:nextd
2010 reada:ifa<>cxthenprint"error in line";2040+(1*10):stop
2020 nextl:end
2040 data9,128,102,254,195,194,205,56,48,169,0,141,32,208,141,33,1915
2050 data208,141,24,212,173,17,208,41,239,141,17,208,169,0,141,136,2075
2060 data2,32,68,229,76,36,128,0,0,0,0,0,0,0,0,0,571
```

Listing 2 - Auto run

```
5 rem *** autorun by shannon rowe ***
10 poke53280,0:poke53281,0:printchr$(155)chr$(147);
15 open15,8,15
20 print"convert a program to autorun"
25 input "enter name of program ";pr$
30 open1,8,3,pr$+",p,r"
35 input#15,e,e$,e1,e2
40 ifnotethenget#1,a$,b$:ifa$<>chr$(1)thene=1:e$="error"
45 ifethenprinte$:close2:end
50 input"[DOWN]enter new name ";cp$:print"[DOWN]this could take a while..."
55 open2,8,4,"0:"+cp$+",p,w"
60 input#15,e,e$,e1,e2
65 ifethenprinte$:close2:end
70 forz=0to7:readx:print#2,chr$(x);:nextz
75 forz=1tolen(cp$):print#2,mid$(cp$,z,1);:nextz
80 forz=0to4:readx:print#2,chr$(0);:nextz
85 forz=0to52-len(cp$):print#2,chr$(0);:nextz
100 data192,2,0,8,1,0,147,34,34,44,56,44,49,139,227,52,3,124,165,26,167,228
105 data167,134,174,0,0,0,0,76,72,178,0,49,234,102,2,71,254,74,243,145,242,14
110 data242,80,242,51,243,87,241,202,241,237,246,62,241,47,243,102,254,165,244
115 data237,245,32,89,166,76,174,167
150 forz=0to57:readx:print#2,chr$(x);:nextz
155 forz=0to1221:print#2,chr$(32);:poke53280,peek(53266):nextz:print#2,chr$(0);
160 get#1,a$:ss=st:iflen(a$)=0thena$=chr$(0)
165 print#2,a$;:poke53280,peek(53266):ifss=0thengoto160
170 close1:close2:close15:poke53280,0
175 input"convert another program ";a$
180 ifa$="y"ora$="yes"thengoto10
185 printchr$(147):new
```

Listing 3 - List protection

```
1 sys 2065
2 remzzzzzzzzzzzzzzz
63000 x=2060:pokex+5,169:pokex+6,225
63001 pokex+7,141:pokex+8,40
63002 pokex+9,3:pokex+10,169
63003 pokex+11,34:pokex+12,141
63004 pokex+13,12:pokex+14,8
63005 pokex+15,169:pokex+16,8
63006 pokex+17,141:pokex+18,13
63007 pokex+19,8:pokex+20,96
63008 pokex,0:pokex+1,0
```

817-0011

Or toll-free on 008 252879

"Amiga & C64 Software Specialists"

BOOKS

In Depth reference - learn to speed up data protection, CLI DOS functions and much more. $34

Introduction to C - explains language elements with examples - C library, compilers and more. $34

SUPER SPECIAL A practical guide to 68000 machine code - plenty of examples. $25

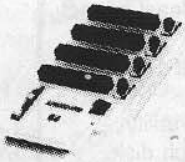
Easy to follow guide to DOS and the CLI - includes Workbench 1.3.

C64er's LOOK!

Expert 3.2 - For serious hackers only. With UTILITY DISK - ready to program.

ONLY $99

Aproexpander.



STOP wrecking your cartridge port! Put all your favourite cartridges on call. **$59**

GEOS

GEOS 64 2.0	$99
GEOS 128	$99
GEOCALC 64	$69
GEOCALC 128	$99
GEOFILE 64	$69
GEOFILE 128	$89
GEOS WRITER 64	$69

Amiga External Drive
On/Off Switch
Daisy Chainable
Slim-Line Design
Quality Construction
Call for price

Still the best database for the C64/C128!

Superbase $59
C128 $69
The Book $29

DISKMASTER for the Amiga

Here at Prime Artifax, we spend a lot of time managing files on our hard disks, and floppies too. After checking out a bundle of utility programs including some cheap PD examples, we still use Diskmaster.

The program enables you to display the directory from two sources - on a different or the same device. Moving into a new directory, selecting files to copy, rename or delete, is then only a click of the mouse away.

There's lots of options for power users. The program is fully multi-tasking, and sits on its own screen so you can keep it in the background until needed.

DiskMaster is highly recommended. Why not grab yourself a copy - and we'll throw in an extra blank disk for good measure! Just mention this ad when placing your order. **Our price only $69.**

excellence!

Call - Our favourite!

WE CAN GET WHAT YOU NEED. JUST CALL FOR THE BEST PRICE IN TOWN

NEW - ANTI-VIRUS PAK
Version 7.0 of our famous Anti-VIRUS PAK will protect you against new strains including the IRQ VIRUS! Now complete with helpful guide to installation, protection and vaccination.

$14.95

FISH DISKS 1-177
AMICUS 1-26
$6.00.
postage free.
MEMOREX DISKS

TERMS

C.O.D. - No extra charge. Pay nothing until you collect from your Post Office.
Freight - Air Mail where possible.
$2.50 eastern states - others $5.

ORDER FORM. Post to: Prime Artifax, 9 Augustine St, Hunters Hill 2110
Name:_____ Day Phone: _____
Address:_____
Post Code: ☐☐☐☐ Payment Method _____ ExpDate_____
Card No.☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐
Order:_____

Amiga-Live!

There's some things that are better left unprinted, at least, in a paper magazine. And there's some things you just can't put in a paper magazine, like a working program, or animated picture.

But, you will find all this and more on *Amiga-Live!*

A bi-monthly magazine on a disk. Two disks are included. The first contains editorial set out in screens to look like magazine pages. The second disk is full of the BEST recent public domain programs - only we've added better icons, and made sure that if it is runnable from the WORKBENCH, you can do just that.

All the programs included

All the programs included come with printed documentation. There are no READ.ME files to look for, just hard copy ready to file away, and refer to when you need it. Amiga-Live!'s programs disk is a good way to collect quality software quickly, and cheaply, if you prefer not to sift through the many Fish Disks looking for those programs that interest you. On our disk, we only put the cream of the rest.

Features of Issue Two - *Summer Fun Edition*

- **Amoeba** - Classic arcade copy of Space Invaders
- **Backgammon** - Strategy one player versus computer game.
- **Moose** - Mac owners eat your heart out! This comical little character is now at home on the Amiga.
- **Amibug** - Watch him walk across the screen just when you least expect it.
- **Uedit** - Word processing on the cheap! Lots of features - edit 100 documents at a time.
- **Browser** - Looking around your disks is easy with this neat utility.
- **Dir Master** - Keep track of what programs you have on which disk.
- **Undelete** - Retrieve accidentally erased files.
- **Memo Pad** - A reminder program to keep track of your appointments.
- **Editorial** - Software piracy - what are the companies really doing about it. Software support - is Australia getting a raw deal.

Amiga-Live! is produced by the editors and contributors to The Australian Commodore and Amiga Review, so you can be assured of the quality. (It's getting better every issue.)

You can order directly over the phone by VISA, Mastercard or Bankcard or send a cheque or money order . . . or we'll do a COD ($3.60 extra!).

CALL (02) 817 0011 to place an order, or write to:

PRIME ARTIFAX, 9 Augustine St Hunters Hill 2110

Name.....

Address.....

.....Postcode.....Day Ph.....

Bankcard ❑ Mastercard ❑ Cheque ❑ Moneyorder ❑ Expiry date.....

Card No: .....

Signature.....

Issue #.... at $24.95 **6 months subscription $119.00 ❑**
3 months subscription $64.95 ❑

Hints and Tid Bits

by Tim Strachan

(reprinted with permission from MEGADISC)

1.3 FASTFILESYSTEM

The FFS is a great addition to the operating system for the harddisk - among its benefits:

- DMA (Direct Memory Access) is supported with direct transfers into and out of buffers.
- Better buffering - you can actually change the number of buffers, giving you greater speed.
- Better search algorithms, when doing DIR or LIST or whatever, giving a lot more speed.
- Fast disk validation.
- More storage space, since FFS uses 512 bytes per block of data instead of 488, giving about 5% more space on disk. NOTE WELL - some hard disk drivers will give strange read/write errors and lose data, because they won't support multi-block transfers.

Either get it fixed by the manufacturer, or put the following statement into your MOUNTLIST for the hard disk: MAXTRANSFER=512 [Thanks to AA&J magazine for this hint.]

There are various hacks about for using FFS on floppy disks, but I doubt that it's worth the trouble. But it is worth the trouble changing your hard disk over, by backing up the contents to floppy, formatting the hard disk (> format drive dh0: name DH0 ffs), changing the MOUNTLIST according to your manual and restoring from floppy.

MS-DOS compatibility for Bridgeboard/Sidecar

MS-DOS version 3.2 has a different disk format to Version 2.11. If you mix formats files will disappear. One access is fine, but on the 2nd access the file will disappear! You can read from disks formatted in the different version but do not write to them. The general rule is either never mix versions or copy disks onto a disk formatted with your version of DOS before use.

Using the AUX: HANDLER - Remote control

The 1.3 manual is pretty terse about using this new capability,which would be

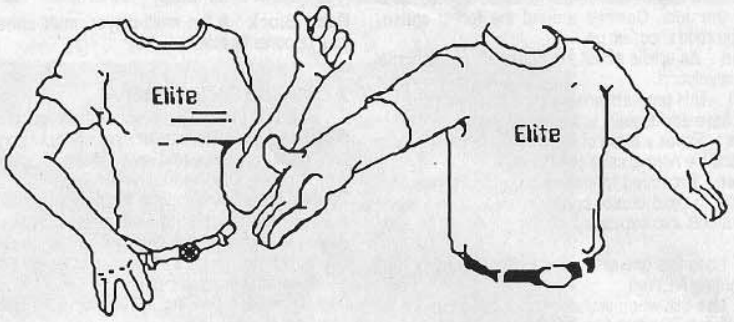
powerful and useful to anyone needing to access his Amiga from elsewhere, like work, or the garage (where you've got another old computer, or wherever). You are told that it provides "unbuffered serial input and output" and that you can use it with another terminal, and that you have to MOUNT it and have an entry for it in your MOUNTLIST file in the DEVS directory (it's there as a default anyway).

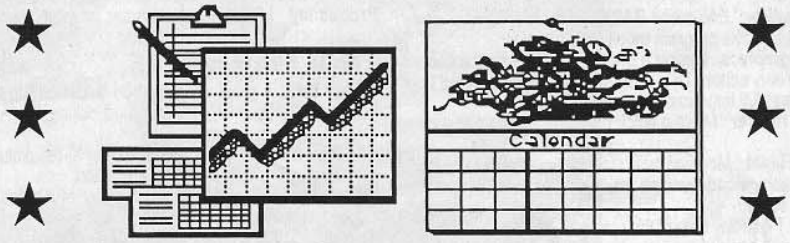
To actually start it going, enter NEWCLI AUX: or NEWSHELL AUX: if you've got the SHELL running. You have to have connected a modem or a NULL modem (ie a serial cable between two computers) to the SERIAL PORT and then talk to your Amiga from your auxiliary terminal. This entails running a Communications program such as GPTERM or Handshake, and calling the base Amiga which simply has its modem connected to its serial port. Once you've logged on, you should be able to act as if you have a CLI or SHELL open in the base computer.

The limitations of AUX: are

- If you've opened more than one CLI or SHELL, input from theauxiliary terminal will be distributed over all of them. And to end one of two SHELLS assigned to AUX: you must type E N D C L I with a space on the end and then <RETURN> - yes, you have to put those spaces in.
- You can't run programs which open other screens or windows (such as NotePad) - they will appear on the base Amiga but not on your remote screen. You can only run commands which use the Console window - things like DIR, LIST and other typical CLI commands. And if a problem occurs, bringing up a System Requestor on the base Amiga requiring a click on OK or CANCEL, you'll be stuck!
- The Communications program DIGA! by Aegis has a feature calledREMOTE which has all the facilities of AUX: along with the ability to chat to anyone on the other end, as well as being able to UPLOAD and DOWNLOAD programs while all this is going on. However, it does work, and some people may find it useful. ❑

Win an Elite T-shirt or a fantastic games calendar





It's easy - just write in and WIN!

Just for you from Questor and *Australian Commodore and Amiga Review.*
Fill in the form below and post to us to be in the draw to win either a great T-shirt with the Elite logo in full colour or a fantastic games calendar with glossy colour pictures of your favourite games - like Red Storm Rising, Project Stealth Fighter, Times of Lore, Ultima V.
That's all you have to do - so let's hear from you soon!

Name .....
Address.....
.....Postcode .....
Size (small, medium or large) .....
Computer (C64/ C128/Amiga).....

★★★★★★★★★★★★★★★★★★★★

Don't miss out on these great bargains!

Australian Commodore Review - SUITE 64

Disk Magazines Nos 1 to 14

Disk Magazine 1 $10

Forest Raiders : A full arcade game based on the movie Return of the Jedi. Centred around the forest chase. Full machine code shoot'em up.
Revolution : An article about the aftermath of the home computer revolution.
Recover II : This program enables you to unscratch files which you have accidentally scratched.
Bsave.bas :- Saves a block of memory using BASIC poke functions and the normal save command.
Nice Lister : Produced formatted program listings converting hard to read cursor controls, color controls and graphic symbols into expanded exclamations within curly brackets.
Old.bas : Load this one and use it to retrieve a program you accidentally NEWed.
Catalog : Use this when you want to obtain a catalog of your disk directory without losing the program in memory.
Ultra-editor : Enhanced BASIC editor with special commands to make program modification easier.
CHARgraphics : Design a BASIC screen using the normal full screen editor. This program will convert it into line numbers, full instructions included.
Line Transfer : Move a block of BASIC program to a new place.
NEW Reset : Modified cold start routine.**Color Window** : Full machine code routine for displaying a field color box on the screen.
Flash : Flash any area of the screen.
Input : A special program to enable entry of data without the usual problems of the user accidentally clearing the screen or entering illegal characters.
Border : Machine code routine to quick draw a border around any part of the screen.
Paint Demo : A Gpascal program to paint a hi-res screen area.

Disk Magazine 2 $10

ECF : A full demonstration version of the card file program with some limitations on the maximum number of cards. Try before you buy. Full instructions included.
Character Editor : Enables you to design your own custom graphics characters for use in game or other programs. Special boot loader also included.
Wacky.set : An upside down character set for the character editor.
Gothic.set : A gothic character set from the adventure game Underworld of Kin.
Computer.set : A computerish character set designed by Scott Wilcox.
Teleport : A simple terminal program.
3D.ult : An ultra BASIC 3D plotting program.
3D.bas : A standard BASIC 3D plotting program.
3D.sim : A Simon's BASIC plotting program.
Bytes and Bits : A complete tutorial explaining binary, hexadecimal and other computer number forms.

Disk Magazine 3 $10

Construct-brix : A drawing program that works using the joystick enabling you to move different pieces into position to create an entire picture. Full instructions built-in.
Bird Invaders : Machine code shoot'em up.
UDPG : Enables you to print user defined graphics on your printer.
Baspred : A BASIC sprite editor.
Calender : Prints out a calender for almost any year.
Point Square : For mathematics and geometry students.
Hangman : A fun computer version of this classic game with a good demonstration of character graphics.
Typing Practice : A simple touch typing program.
Labyrinth : A 3 dimensional maze type game.
Finance : Calculates loan repayments and various other costings.
Road Block : A fun multi-player, multi-speed block in your opponent game.

Disk Magazine 4 $10

Graphics Workshop : A suite of design programs for producing graphics characters, sprites, sprite animation, hi-res graphics and split screen effects. Complete with tutorials, fully menu driven.
Typing Tutor : A complete touch typing tutor that automatically works on your weaknesses. A keyboard displayed on screen highlights the key to be pressed encouraging you to touch type correctly. Includes space game for the young at heart.
Directrix : A disk filing system by Paul Blair. Instructions included.
Plurals : Educational program for English students.
Probability : Mathematics program for math students.

Disk Magazine 5 $10

Amiga Ball : A graphics animation based on the famous bouncing Amiga ball demonstrated during the Amiga's release.
The Porsche : An excellent multi-color hi-res picture.
Max Headroom II :A full screen animation.
Seven-Up : Brilliantly designed effect of a rotating can of Seven-up with accompanying music.
Sprite Database : Maintain a complete database of all your sprites as well as designing new ones and editing old ones. Instructions included.
Newsroom Loader : For MPS 802 and 1526 owners enables you to print Newsroom screens and borders.
Signwriter : Allows you to print a large sign to the MPS 802 or 1526.
Character Saves : Copy and save upper case, lower case or computer character set.
Dump Directory : Print a directory listing of any disk to your printer.
DD SGPrint : Prints a Doodle file to your MPS 802 printer.
PS BGPrint : Print Printshop pictures to your 1525/ MPS 802 printer.
Centronics Driver : This program enables you to use a Centronics printer in conjunction with a centronics cable connected directly to the user port. Such a cable is available as the GEOS cable. Just run the program and you can send any normal print output via the user port with or without ASCII conversion.

Disk Magazine 6 $12

Burt the Bug : Good example of character graphics animation in this fun game of collect the fruit while avoiding the boot.
Hangman : An improved version on our earlier release.
Amiga Pharoah : An Amiga picture ported to the Commodore 64 with some interesting effects and music.
Space Harrier : Music and graphics from the game.
Max Headroom : A still picture of this loveable character.
The Pacer : Brilliant perspective animation in this graphics demonstration with music.
Sade : Synthesized music by the popular artist.
Light Fantastic : An interactive demonstration enabling you to modify various aspects of this hi-res effect.
Dir828 : A compact disk directory program that sits in the cassette buffer.
Disk Filer : Enables you to catalog all your disks into one large file.
Disk Labels : Prints a disk label.
Dual Labeller : Prints two disk labels at a time.
Report One : Enables you to print your disk catalog in five columns based on either program name, ID or just the complete file.
1571 Utility : For Commodore 128 owners.
Home Inventory : Maintains a catalog and value for your entire home inventory. Ideal for insurance purposes.

Disk Magazine 7 $12

Dark Forest : Between one and four players strategy game where you must conquer your opponents by capturing land areas or castles.
Joystick Tester : Double check that your joystick is working in all directions.
Irish Jokes : A collection of humorous one liners from our resident Irish joker.
Dice Roller :Lost the dice to your favourite board game recently? This program will simulate a random two dice throw.
Demonstrations : Karate Kid II, Thrust Concert, 3D demo, Don Martin, No More Heroes, Recursion, Funny, Whizzy, Transputer, Classics, Special.
Ps/Pm/Nr Converter : Exchange graphics between Printshop, Printmaster and Newsroom.
Ps Graph/Epson/CBM : A program to print Printshop graphics on either an Epson, Commodore or other printer.
Chord Maker : For guitar students, define a chord and print it out.
Anti-ISEPIC : Removes ISEPIC front end off snap shotted programs.
The Sledgehammer : Compact BASIC and machine language programs to save disk space.
Fast Format : Format disks on your 1541 in around 20 seconds
Renumber : Renumber your BASIC programs for readability and space saving.
Graphics Editor :- A complete machine language sprite and character editor by Andrew Crowther.
Sidekick v3.C :A huge array of DOS utilities and generally helpful programs.
Home Finance : For helping manage your home budget.
Oscilloscope :Use in conjunction with the interface designed by Andrew Baines to produce an oscilloscope display on your screen.
Ultimate Writer :- Send musically accompanied letters with redefined characters to your friends.
C64/128 Boot Maker :- Enables you to boot a 64 disk from 128 mode.
Convert BASICs :- Converts from BASIC two and four to BASIC seven on the 128. The program will read a specified file from disk then print a display of all unknown key words and line numbers that use PEEK, POKE, SYS, WAIT and USR. Output can go to the screen or a printer.

Disk Magazine 8 $12

T & S Spreadsheet :- A full machine language track and sector editor for hackers and programmers.
Function Keys :- Enables you to define the Commodores eight function keys to a meaningful command.
Unscratch :- Undelete programs you have deleted.
Relocatable DIR :- A small program to retrieve a disk directory which may be placed anywhere in memory.
Tape Header Modifier :- Enables you to rename tape files.
Enterprise II :- Several hi-res pictures accompanied by interesting musical arrangements.
Eddie Demo :- Theme from the movie Beverley Hills Cop.
Games :- Full machine code shoot'em up.
ESCOS V2.99 :- Allows you to snapshot part of any graphics picture and produce a full screen display using 112 sprites.
Newsroom Camera :- Snapshot part of any hi-res graphic to produce Newsroom clip art.

Calendars :- An improved program to produce a calender for any year.
Cheque Writer :- Fill in the details and print a professional looking cheque on the Westpac standard small size cheque.
Clock :- A special clock which is displayed in the border.
Future Writer :- A full blown hackers word processor for sending musical messages using a variety of type faces.

Disk Magazine 9 $12

Disk Tidier :- Enables you to modify the order of your directory listing.
Menu Maker :- A simple boot loader for the front end of your own disks.
Doctor 64 :- Is your computer looking a little off color? This program passes a test through all the main devices selectable from a icon driven menu.
Sprites in the Border :- From our December 1987 issue demonstrating how to use sprites in the border this program enables you to edit your own message and display it scrolling in the border.
Sprite Clock :- The complete clock in the border program by Andrew Baines.
Metric Converter :- 22 conversions from Imperial to Metric and reverse.
Stock Market :- An educational game.
Star Trek :- For all Trekkie fans here is an original version of that famous game.
Little Invoicer :- As appearing in the December 1987 edition this program enables you to run a basic invoicing system.
Demonstrations : Alf, The Trap Demo, Future Shock, Pure Genius, DNA, XESS 1-Rendezvous, FTL Demo, Weird One II, Taurus II, Real Real Thing, Sights and Sound, Crazy Sample I, Brick Wall, Incredible, Drive Music, Get Funky.

Disk Magazine 10 $12.95

- Features ADOS Menu System
Diary - Version One of our Appointment Manager System. Both the compiled and BASIC version are included.
Depreciation :- Educational program for demonstrating and calculating the process of depreciation using three commonly used methods.
Define Function Keys :- Yet another function key definition program. This one is particularly easy to use.
Hamlet :- A good version of the popular game Othello.
Cup Challenge :- A two player only using two joysticks sailing simulation.
Star Gunner :- Shoot'em up perspective view.
Chemistry :- Features the chemical symbols of the periodic table. Ideal for year 8 and 9 students.
Music 64 :- A full featured music editing program written in compiled BASIC.
Print Sheet Music :- Enables you to print out sheet music on your printer in case you run out of the real stuff.
Slide Show :- A brief selection of impressive graphics.
Demonstrations : Amiga Memories, Beyond 2, Border Screen, Hero, Knight Games Music, Madonna Demo, The Working 64, Watch the Eye, ESCOS I, ESCOS with Music, Sting, Bairds Tale.

Disk Magazine 11 $12.95

80 Characters :- A special driver enabling the display of 80 columns of text. Useful for your own BASIC programs.
Graphic Converter :- Transfer pictures between a variety of formats.
Line Number Deleter :- Allows you to perform block deletes from BASIC.
Function Keys :- Here is yet another function key program.
System Locater :- Helps you find the SYS call to start a machine language program.
Fixed Directory :- Will reconstruct some disk corruption problems.
Disk Searcher :- Just enter the text that you are looking for and this program will try to locate it on your disk.
Disk Tidier :- Batch program deletion.
1541 Drive Alignment :- A quick utility which promises to align your disk drive - untested.
Disk Doctor :- Another program for reconstructing corrupt disks.
Hi-res Jigsaw :- This fun program lets you pick a picture and then it rearranges it into small blocks. Use the joystick to try and reconstruct the image.
Equation Manipulation :- Teaches the rules of equation manipulation. Helpful drill section.
Linear Equations :- Teaching and drill educational program.
Probability Demonstration
Printer Drivers :- Side Two of this disk contains a long list of printer drivers for GEOS including the 1526/ MPS 802 and many others.

Disk Magazine 12 $12.95

Appointment Manager V1.2 :- Updated from Issue Ten, now with search and print options.
Third Term 1.0 :- A fully menu driven terminal program.
Panes :- Based on the July Issue, 1988 of ACR, this program allows you to produce simple windows and menus. Written by Andrew Baines.
Atlantis :- A fast shoot'em up where you are a fish underwater. Excellent graphics, lots of levels.
Circle Navigation :- Calculates the distance between any two points on the globe.
Slope and Intercept :- Teaches the formulae involved for working out gradient, x and y intercepts. Full instructions included.
Music :- A selection of three music compositions by Eric Holroyd which you may include in your own programs.
GEOS Upgrade :- Side two contains a number of files which you should copy to a GEOS disk in order to upgrade to Version 1.3
Educational Programs : Portfolio, Balance, Investment, Bonds. All have built-in instructions.
Time Crystal :- An interactive graphic demonstration by Jim Sachs. One of the masters of Commodore 64's graphic capabilities. This was the beginnings of a game which he never completed.

Disk Magazine 13 $12.95

Charles - a huge graphics adventure with animation. You are Charles and must locate the missing computer and return it. Joystick control enables you to travel over 390 screens during five levels. It maintains high scores.
Stowaway - a text adventure by Base Seven Software. You are a stowaway on a ship - can you escape?
Blackjack - Play the computer at this favourite card game.
VCR Index - keep a file of all your favourite video cassette recordings, tapes or records.
Graphic Converter - An invaluable utility that enables you to transfer clip art type graphics from Printshop, Printmaster, Stop Press and even future programs to other formats. You can also convert between various picture types such as Blazing Saddles, Koala Painter, Art Studio, Image System, Artist 64 and others.
Disk Diskassy - The best disk utility ever written for the C64. It's in full machine code and includes a BAM editor, Directory Editor, Sector Editor, Index Maker and Menu Creator. All menu driven, very easy to use. Ideal for programmer and hobbyist.
Disk Label Maker - Print one or two sided labels complete with a directory of what's on the disk or customise your own entries to either an Epson FX or MPS801/803 printer.
Icon Changer (GEOS) - This program will let you edit them to your own design.
Easy DOS - A quick little program for obtaining a directory, scratching or unscratching files, renaming programs or changing your disk header.
Cruncher BASIC - Pushed for memory? This program will in seven parcels compact your program as much as possible by compounding statements onto one line.
Calc - A simplistic spreadsheet type program which is currently tape based but may be modified to save data to your disk drive.
Font Diskassy - A character editor that also lets you create pictures by combining characters together.
Graphic Demonstrations - A selection of pictures and music from hackers and artists around the world.
PLUS various other short utilities and fun programs.

Disk Magazine 14 $12.95

Electronic Cad Package - Design electronic circuits using two sets of predefined component symbols, alternatively define your own symbols. Use for any architectural or planning application.
Software Cataloguer - Keep track of all your favourite programs, which disk they are on and the type of file. Sorts and prints.
Character Thief - Extract redefined character sets from commercial games for your own personal use.
Pointer C64 - Give your C64 an Amiga pointer. This amazing function is accessible from BASIC with examples of use included.
Best single disk file copier - An easy to use program for moving files around your disk. Collection allows wild cards format from program and multiple copies.
Never ending scroll - Edit and design your own message scrolling across the screen in a variety of colours with optional flashing and at whatever speed you require. Saves to a machine code program which can be run. Works from IRQ.
SEQ file reader - Enables you to view sequential files such as those produced by Easy Script on screen.
CompuPage - A fun game for up to four players. Based on the popular board game Pay Day. And lots of demos.

Order Form

Name.....

Address.....

.....

.....Postcode.....

❑ Cheque ❑ Bankcard ❑ MoneyOrder

No:.....

Expiry Date.....

Signature.....

_____copies Disk Magazine No 1 @ $10
_____copies Disk Magazine No 2 @ $10
_____copies Disk Magazine No 3 @ $10
_____copies Disk Magazine No 4 @ $10
_____copies Disk Magazine No 5 @ $10
_____copies Disk Magazine No 6 @ $12
_____copies Disk Magazine No 7 @ $12
_____copies Disk Magazine No 8 @ $12
_____copies Disk Magazine No 9 @ $12
_____copies Disk Magazine No 10 @$12.95
_____copies Disk Magazine No 11 @$12.95
_____copies Disk Magazine No 12 @$12.95
_____copies Disk Magazine No 13 @$12.95
_____copies Disk Magazine No 14 @ $12.95

PLUS $2.00 P+P TOTAL _____

Post to:
Australian Commodore Review
21 Darley Road
Randwick, NSW 2031

OR
Use your Bankcard and phone us to order on:
(02) 398 5111

Please allow two weeks for delivery

Postage & packing $2.00

Controlling the C-64 cursor

How often have you wished that you had complete control of the cursor when programming your Commodore 64? It doesn't take long before you get sick of using the HOME key and CURSOR keys with a print statement.

We are now going to look at a simple, foolproof method of setting the row and column required before printing.

If we want to print the word HELLO on row 10 starting at column 15, we would simply write R=10:C=15:gosub 680 on a program line and simply type PRINT "HELLO" on the next line.

The important part here is the subroutine on line 680:
680POKE781,R:POKE782,C:SYS65520690 RETURN

What really happens here is the poking of the row and column values into the computer's X and Y registers and the activating of a plot routine in memory location 65520 ($FFF0 in hexadecimal) which sets the cursor position. Note here that the rows are numbered from zero to 24 and the columns from zero to 39.

To do the same thing in direct mode (not inside a program) we simply enter: poke781,10:poke782,15:sys65520:print"h ello". Now that we can precisely position the cursor, we can design our programs better. I don't mean the simple poking of random numbers into the registers to create random patterns or placing the column number in a loop to bounce characters around the screen. Presentation becomes easy and quite professional.

At the end of this article is a program which draws a table on the screen and requests information (the length and width of four rectangles). The values are accurately positioned inside the table as well as calculated data (areas of the rectangles). This example serves to demonstrate the ease with which we can accurately draw the table and place the information in it. The table has been built out of white blocks, by switching on reverse (ctrl-9) and pressing the space bar, then switching it off again. Lines 40 to 190 draw the three horizontal lines by setting the row number (one, three & eight) and using a loop to print each block from column 10 to 34. Lines 200 to 400 draw the vertical lines, this time by setting the column number (10, 19, 27 & 34) and using a loop to change the row on which the block is printed. Lines 410 to 470 set the row and column then print the three headings.

The table is now complete and requires the length and width of four rectangles to be entered, the input statement being placed inside a loop. The table is filled in between lines 550 and 630. A loop inserts the four lengths in column 11 then another loop inserts the widths in column 21 and the areas are calculated and inserted in column 28. The last step moves the cursor to the bottom of the screen away from the table.The important subroutine from lines 670 to 690 makes this all possible.

Store this on a disk and load it any time you wish to use it in a program. The key to success is in keeping the cursor away from the bottom of the screen as this causes the screen to scroll, altering the row locations. ❑

```
10 REM  ** TABLE PROGRAM **
20 PRINT "[CLS]"
30 POKE53281,6:POKE53280,11:PRINT"
[WHT]"
40 REM  ** DRAW HORIZONTAL
LINES **
50 R=160 FOR C=10 TO 34
70  GOSUB680
80 PRINT "[REV] [OFF]"
90 NEXT C
100 R=3
110 FOR C=10 TO 34
120 GOSUB 68
130 PRINT "[REV] [OFF]"140 NEXT C
150 R=8160 FOR C=10 TO 34
170 GOSUB 680
180 PRINT "[REV] [OFF]"
190 NEXT C
200 REM  ** DRAW VERTICAL LINES
**
210 C=10
220 FOR R=1 TO 8
240 PRINT "[REV] [OFF]"
250 next r
260 C=19
270 FOR R=1 to 8
280 GOSUB 680
290 PRINT "[REV] [OFF]"
300 NEXT R
310 C=27
320 FOR R=1 TO 8
330 GOSUB 680
340 PRINT "[REV] [OFF]"
350 NEXT R
360 C=34
370 FOR R=1 TO 8
380 GOSUB 680
390 PRINT "[REV] [OFF]"
400 NEXT R
410 REM     ** INSERT HEADINGS **
420 R=2:C=12:GOSUB 680
430 PRINT "LENGTH"
440 R=2:C=21:GOSUB 680
450  PRINT "WIDTH"
490 R=10:C=2:GOSUB 680
500 PRINT "ENTER LENGTH &
WIDTH FOR 4 RECTANGLES"
510 PRINT " SEPARATED BY
COMMAS"
520 FOR A=1 TO 4
530 INPUT "ENTER 2 NUMBERS";L
(A),W(A)
540 NEXT A
550 REM      ** FILL IN TABLE **
560 FOR A=1 TO 4
570 R=3+A:C=11:GOSUB 680
580 PRINT L(A)
590 C=21:GOSUB 680
600 PRINT W(A)
610 C=28:GOSUB 680
620 PRINT L(A)*W(A)
630 NEXT A
640 REM  ** REPOSITION CURSOR **
650 R=22:C=5:GOSUB 680
660 END
670 REM  ** CURSOR SUBROUTINE
**
680 POKE781,R:POKE782,C:SYS65520
460 R=2:C=29:GOSUB 680
470 PRINT "AREA"
480 REM      ** REQUEST SIZES **
230 GOSUB 680
```

Computer numbers Part 2

for the newcomers to computing

At the end of Part 1 of this article, we were about to look at the address 49152 to 53247 we call Special User RAM. This is because it is an area set aside to store Machine Language programs etc, keeping them out of the way of our normal Basic program. It's to this Area that the Command SYS is often directed, eg. SYS 49152, this would allow a subroutine previously stored at this address to be used in conjunction with a running Basic Program.

On examination of a proper memory map for the C-64 you will likely find the areas referred to above labelled in hexadeciml only, or decimal only, or both. From the above map our Basic User RAM starts at decimal 2048, but suppose your map is only labelled in hexadecimal. For example $0800 - you transpose it to decimal to see just where on the map you are; no trouble, just use our previous method. Write down the hex number $0800. We can see it's a two byte number. Write down the multiplier and multiply it out and ADD it together. Remember addresses are two bytes.

$0	+	8	+	0	+	0	our hex number
*		*		*		*	
4096	+	256	+	16	+	1	multiply by our multiplier
0	+	2048	+	0	+	0	add together and equals 2048

So $0800 is the same as 2048 and is the starting address of our Basic User RAM in hexadecimal.

Can you see that $0800 is a two byte number? To check it let's change it into its binary equivalent.

High Byte	+	Low Byte	
$08	+	00	Our hex number in two bytes
0 + 8	+	0 + 0	Changed to half bytes
0000 + 1000	+	0000 + 0000	Changed to binary half bytes
00001000	+	00000000	Changed to binary bytes

So binary 0000100000000000 equals $0800 and equals decimal 2048

See how easily hexadecimal converts to binary, that's the reason it's used in machine code. Try out a few conversions yourself.

How the computer looks at memory

As novices we visualise memory as addresses or pigeonholes numbering from 0 (zero) to 65535, but this is not the way the computer looks at it. The computer's way of thinking of memory is as PAGES of memory and as POSITIONS on these PAGES. To the computer it is like this:

One page of memory is 256 bytes.

Four pages of memory is 1024 bytes or one kilobyte.

There are 256 pages of memory (0 to 255 pages) in the C-64 and the FIRST page of memory is called Page Zero, no surprise there. This is a very important page indeed to the computer. Here it stores special data it uses in its operation, uses Zero Page (one byte) Addressing. Leave this area of memory well alone, you will no doubt study it later on in your ML programming.

A point about addresses we should know and remember is that, because of the way the computer uses its data, they must be entered as low byte first then high byte second - opposite to what you would expect.

Let's look at an address we are already familiar with - the start of Basic RAM at decimal 2048 and $0800. When the computer sees the high byte 08 and the low byte 00 it immediately knows to go to Page 8. It then looks at the low byte and sees 00 and knows to look to the first byte 0 the start of Page 8. Let's check it, 256 bytes per page and the decimal number equivalent to $0800 is 2048. Divide 2048 by 256 and the answer is 8.

You must recognize that our two byte addresses are just that - two byte numbers that are added together to give a number of an address in memory.

The two byte numbers used by the computer to select pages and page positions in memory are two separate bytes, with high byte relating to the page in memory and the low byte giving position on that page. But our two byte address and the computer's page and position on page address BOTH relate to the SAME BYTE in memory. Realizing how the computer handles memory, we can handle numbers the same way when we change our large decimal address numbers intp hex and from there to binary. How do we convert a decimal address into hex using the page and position on page method? From our memory map let's take the last address in the Basic Interpreter Decimal 49151.

49151 divided by 256 gives us the page number and also the high byte, answer 191 and 255 left over so 255 is the low byte.

191 divided by 16 equals 11 and 15 left over
change to hex $BF.

255 divided by 16 equals 15 and 15 left over
change to hex FF

So Decimal 49151 equals $BFFF.

Let's convert the next decimal address 49152, the start of Special User RAM. We can see it is exactly ONE byte ahead of the last address.

49152 divided by 256 gives us the page number and the high byte, the remainder will be the low byte.

The division gives 192 page number and no remainder.

192 divided by 16 equals 12 and no remainder
change to hex $C0
0 divided by 16 equals 0 and no remainder change to hex 00
So decimal 49152 equals $C000 and is exactly ONE byte ahead of our first address.

You have read it and still wonder where does the 16 come from? We will work one out fully, the starting address of the Basic Interpreter Decimal 40960.

Let's recap: Since the C-64 is an eight but (one byte) computer and can only accept a byte of information at a time and a byte can only hold a number up to 255 and no greater, when entering numbers larger than 255 such as in this case large address numbers, the computer uses two bytes to form one large number and the bytes must be added together. Where do the multipliers 16 and 1 come from?

Let's look again at the byte, 11111111 (eight bits)
Change it into two half bytes, 1111 + 1111
Change it to decimal equivalent, 240 + 15 = 255
Now to change the decimal to hex, 240/16 + 15/1
equals, 15 + 15 (15=$F)
Hexadecimal number is, $FF = 255
Because the hex system is a Base 16 system, as we move right from the units (ones) position our multiplier increases by 16 each time.
So $FF in decimal is 15*16+15*1 = 255
And 255 in hex is 255/16 + any remainder/1 = 15 + 15 = #FF

In the interest of understanding by the newcomer, a repeat of above using decimal 40960, a two byte address number.

We first change to hex by dividing it by 256, the number of bytes in a page of computer memory. This will give us the page and will also give us the high byte because the computer reads the high byte as the page of memory.

The result is 160 and no remainders. So the page number is 160 and it is also the high byte.

Now what is 160 in hex? We know that when we convert hex to decimal we multiply by our multipliers, so when we convert decimal to hex we divide using our multiplier numbers. Since we are only dealing with a SINGLE BYTE ie high and low but separate bytes we use numbers 16 and 1.

High byte 160 divided by 16 equals 10 and no remainder and 10 equals A in hex, high byte = $A0.

Low byte since there is no remainder will be 00.

40960 decimal = $A000.

Now as a check:

HIGH BYTE		and	LOW BYTE		
A(10)	0		0	0	The hex number in half bytes
*	*		*	*	
16	1		16	1	multipliers
160 +	0	and	0 +	0	
160		and	0		Page and position on page

Now the same hex number as a decimal address number:

HIGH BYTE	+	LOW BYTE	
A(10)	0 plus	0	0
*	*	*	*
4096 +	256 +	16 +	1
40960 +	0 +	0 +	0

You can check out the Starting Addresses of our Part Memory Map by dividing the Decimal Address by 256, you will find they all begin at the start of a Page in Memory.

Screen Memory Address (1024-2023), Colour Memory Address (55296-56295), and PEEKS and POKES.

Our look at numbers must include Peeks and Pokes. These commands use decimal numbers, and using them we can Peek into memory and see the actual byte stored in the address Peeked.

Using the Poke command we can alter a byte or bytes in memory to suit our programming needs. Remembering of course that some memory cannot be altered with the Poke command.

The areas we will use to try our Peeks and Pokes are the screen and colour memory areas.

Screen memory runs from 1024 to 2023 decimal in the Commodore Memory Map and we can Peek into any area of screen memory. We can also Poke into the area. Our example of Poke will change the screen background to RED, the border area to YELLOW, and place a YELLOW heart in the middle of the screen. Type in and Run the following short program.

```
10 PRINTCHR$(147)  (clear screen)
20 POKE 53281,2    (change background colour to red)
30 POKE 53280,7    (change border colour to yellow)
40 POKE 1523,83    (place heart in middle of screen)
50 POKE 55795,7    (change colour of heart to yellow)
```

A yellow heart will appear in the middle of a red background with a yellow border.

Line 20: 53281 is the address of the byte that stores the screen background colour. Its default colour is the start up screen colour, By altering the number following the comma we can alter the background colour, however when we press Run/stop Restore the screen returns to its normal colour.

Line 30: As above but with the border colour.

Line 40: 1523 is the address byte corresponding to the centre position in the screen memory and 83 is the screen display code from Appendix E (page 133 Users Manual) that is poked into screen memory to place a heart on screen.

Line 50: 55795 is the POSITION in colour memory that corresponds to position 1523 in screen memory, and 7 is the number that turns whatever is in that position to Yellow, in this case a heart. The easiest way to get the position in colour memory that corresponds with the position in screen memory:

Colour memory begins at Address 55296
Screen memory begins at Address 1024
Subtraction gives us 54272

The colour memory is 54272 bytes ahead of the screen memory. If we ADD 54272 to the screen memory it will give us the corresponding colour memory position we need.

From above program screen memory position address 1523 now add 54272., the answer is 55795, the Poke on Line 50 of our program.

Using Pokes you can make keyboard keys repeat, POKE650,255 and POKE650,0 back to normal. Many other POKE operations are available. As an example of Peek we will press Run/Stop Restore and then Peek to see the default screen background and border colours.

The command is Print Peek (and a decimal address number).

```
10 PRINT PEEK(53281) AND 15    (the background colour)
20 PRINT PEEK(53280) AND 15    (the border colour)
```

RUN it then look up the colours that correspond to the numbers given, on page 61 of the Commodore Users Manual (see page 62 for the reason we use AND 15).

We will be using Peeks and Pokes in our look inside the computer memory of the C-64.

A look into C-64 memory

We have now enough insight into memory to have a quick glance at how our programs are stored in memory by the computer. But first an explanation of how Basic statements are presented in memory so as to conserve bytes of memory. Take the example of program line,

10 print: " The new print "

The first Print is a Basic statement and the second is the word print. Print the Basic statement is placed in memory as a TOKEN and the TOKEN for Print is 153 (only ONE byte). The word print will be placed in memory with each letter being a separate byte, using the ASCII codes (see page 135 Appenndix F in your Commodore Users Manual). Yes, it's

Roseneath Computers
Free Post No.6
P.O Box 506 Engadine 2233
Phone: (02) 520-2933
Commodore 64/128 & Amiga;
Software, Books & Accessories
We have the **BEST** prices
and **FREE** postage
Write or phone for a **FREE CATALOGUE** with over 1100 products. We accept the following Credit Cards.
Bcard | Mcard | Amex

Cockroach Software
PO Box 1154
Southport 4215

Cockroach Turbo Rom	$42.00 inc postage
Cockroach Graphics Utility	$69.95 inc postage

Printer Ribbons

COMMODORE			
MCS 810/20	16.95	Epson FX100	15.50
" COLOUR	17.75	Epson LX800	13.50
MPS 801	11.75	Epson LQ500	15.00
MPS 802	11.75	Epson LQ1000	17.00
MPS 803	11.00	NEC P7	17.50
MPS 1000	8.75	OKI 183	12.00
MPS 1200	12.50	P'sonic/Logitec	12.50
		" seamless	14.50
Apple I/writer	8.50	Riteman C+/F+	16.00
" 4-colour	20.00	Star NX10	12.50
Brother 1509	20.50	Star NX15	14.75
DSE GP80	16.50	Star N24-15	18.95
Epson EX800	16.50	Star NX1000	8.75
Epson FX/MX80	13.50	" 4 colour	27.50

- quantity discounts for 6+, 12+, 24+
- many other types available
- single colours available at a surcharge
- all these (except MCS 810/20) recyclable (reink or reload)

D-I-Y RIBBON RECYCLING
REINKING MACHINES : $190
ROLLED RELOADS to fit most cartridge types (black, colour, 4-colour) : POA

Lazarus Ribbons
70 Wolseley Rd, Mosman NSW 2088
tel: (02) 960 2737
fax: (02) 968 1276

SAVE MONEY - FIX YOUR OWN COMPUTER
THE COMMODORE DIAGNOSTICIAN
A two-sided laminated symptomatic chart for diagnosing faulty IC components on Commodore C64 and peripherals etc. An invaluable tool for those who want to do their own repairs, save money and down time. This diagnostic tool was developed in the USA where it has proved most effective. Price $8.95 includes postage.
LOW PRICES FOR COMMODORE CHIPS
#6526-$15.95, #6510-$17.50, #6581-$20.30, #6569-$34.60, #901225-$$15.90, #901226-$16.40, #901227-$16.10, $8721-$19.90, #8722-$15.75, and many more. Packing and postage by certified mail $4.00.
WILCOM AUSTRALIA PTY LTD
PO Box 48 Kyneton Vic 3444
Telephone (054) 223329
PHONE OR MAIL ORDERS WELCOME
BANKCARD AND MASTERCARD ACCEPTED
Prices subject to change

COPYGRAPH
106 Pring St, Hendra QLD. 4011
Ph (07) 268 7711
AMIGA USERS!
We turn your graphic creations into colour slides, photos, or overhead transparencies... all from your disk.
Prices start at $1.60 !
For more information, prices, and order form, send this coupon away today.
BLOCK LETTERS PLEASE
NAME.....
NO. & STREET.....
.....
SUBURB.....
P/CODE.....STATE.....
PHONE ( ).....
Please Post To:
COPYGRAPH
PO BOX 1019, TOOMBUL
QLD. 4012

really meant to be read! The Token numbers range from 128 to 202 and if you hunt around you will find a copy of them. Tokens are one of the reasons C-64 programs are not readily transferable to other computers. Commodore Basic has them, other Basics may not recognise them at all. So as not to complicate matters we will only list the TOKEN numbers of the statements used in our example. We will also be using the ASCII codes but you can check them as mentioned above.

Basic Command	Its Token Number
Print	153
For	129
Peek	194
Next	130
Stop	144
To	164

To look inside the computer memory we will enter a small Basic program. We know that it will be entered in memory starting at decimal 2048 ($0800) the start of Basic User RAM. We will then Peek at what is stored in the memory starting 2048 and we will decipher it.

First clear the computer memory, then enter the following program.

```
10 PRINT"HEX AND BINARY"
20 PRINT"MAKE SENSE'
30 FOR X = 2048 TO 2150
40 PRINT PEEK (X),
50 NEXT X
60 STOP
```

Then RUN the program and the following will appear on your screen.

```
HEX AND BINARY
MAKE SENSE
```

and the following numbers

0	23	8	10
0	153	34	72
69	88	32	65
78	68	32	66
73	78	65	82
89	34	0	41
8	20	0	153
etc	etc	until end of program at 60 STOP	

What do they mean?

Zero (0) the zero byte .0 is always the first byte in the start of the first Basic entry so a zero is always at 2048.

23 Low byte of the position of the START of the next Basic line.

8 High byte of the position of the START of the next Basic line.

Remember we know addresses must be entered as low byte first then high byte, this shows an example of it in operation.

To work out the position of the start of the next Basic line we multiply the high byte by 256 and add the low byte to it this gives 8*256 equals 2048 + 23 = 2071 is the starting position of the next Basic line in our little program. Notice how easily the computer can see the page and position on page. Page 8, position on page 23.

10 The low byte of our little program line number.

0 The high byte of our little program line number.

To work out our line number, same as above 0*256 + 10 = 10 the first line number in our little program.

153 The Token for the PRINT statement

34 ASCII code for the PRINT statement

72 ASCII code for H, 69 the code for E, 88 the code for X, 32 the code for space, 65 the code for A.

Using the Token numbers given and the ASCII code from the Commodore Manual you have the tools to decipher the whole program if you so desire.

A little more on the zero byte for those who study the program right to the end. When you see TWO ZERO BYTES as the address of the next program line it indicates the end of the program has been reached. Since each basic line ends with a zero then three zeros together tells you the program has ended.

Note zero (0) is ASCII code 48 and zero byte is a zero byte.

For those of you with a printer, the following program will give you hard copy of this version you have placed in memory.

```
5 OPEN4,:CMD4:
10 PRINT"HEX AND BINARY"
20 PRINT "MAKE SENSE"
30 FOR X=2048 TO 2150
40 PRINT PEEK (X),
50 NEXT X
60 PRINT#4:CLOSE4
```

You will need the following extra Tokens.

Basic Statement	Token number
PRINT#	152
OPEN	159
CLOSE	160
CMD	157

We used Print Peek to look at the memory locations and we can use the Poke Command to alter a location if we so desire.

First LIST the program, when it's on the screen enter POKE 2053,143. This is another Token, 143 is for REM.

Now LISTthe program again, can you see what has heppened? Memory location 2053 was originally a PRINT (Token 153), it has now become a REM (Token 143). Now RUN the program and compare the result.

The FIRST line "HEX AND BINARY" is NOT Printed on the screen. We really have altered a part of memory. POKE 2053,153 and it becomes PRINT again.

This brings us to the end of our very limited examination into numbers and their relation to memory in the C-64. I hope it will assist you to explore further into the workings of the computer. ❑

Adventurer's Realm

by Michael Spiteri

Greeting! knights, princes and princesses, maidens in distress and other forms of adventure heroes and heroines, welcome once again to the dark and mysterious caverns of the Realm, Australia's only adventure section dedicated to Commodore and Amiga adventurers.

If you are stuck in a game, write to me and I'll see what I can do. If I can help you, I'll reply, if not, I'll print your problems on these pages. If you can give some help then please don't hesitate! If you want some of the free hint sheets (four per person - max) then write to the following address:

Adventurers Realm
1/10 Rhoden Court
North Dandenong, Vic 3175

If wargaming is your forte, then resident wargame expert Barry Bolitho is here to help you out. Just mark your envelope Wargame Section.

Kamikaze Andy is the Realm's role-playing freak, and queries on RPG's should be sent to:

Realm's RPG Dept.
44 Hawkesbury Drive
Willeton, WA 6155

Realm's free hint sheets

Brenden Quinn has sent in a hint sheet for *Deja Vu*, and David McKinney has provided a hint sheet that covers *Dracula Pts 1,2,3*.

Other hint sheets available include

- Bards Tale 1,2,3
- Zork 1,2,3
- Hitchhikers Guide
- Hampstead
- Hobbit
- Castle of Terror
- NeverEndingStory Pt 1
- Lord of the Rings Pt 1
- Adventureland
- Borrowed Time
- Faery Tale
- Pawn
- Pirate Adventure

If you are writing to the Realm, make sure you enclose a s.a.e just in case I can reply to you. If you are asking for hint sheets, make the envelope fairly large.

Review: Mystery of Mortville Manor

by Michael Spiteri

This month we travel to a small town in France, set back in the early Fifties, to unravel a compelling mystery.

You play the role of the French private eye Jerome Lange. One cold winter evening while sitting in your small office in Paris, you receive a letter from a childhood sweetheart, Julia Defranck, now an old woman. Apparently for some unknown reason, she is in great danger and asks you to meet her at her old manor. Within hours you pack your bag and head off to the infamous - Mortville Manor!

You are greeted by the faithful butler Max, who tells you the disastrous news that Julia has died. Her surviving family, Leo (her husband), Huy (her son) and Eva his girlfriend, Pat (Leo's son from another marriage), cousins Bob and Ida and her husband Luc, are all present at the manor. The storm is pretty bad outside, and you are invited to stay until it dies down, hence giving you the chance to try to solve the mystery of Julia's alarming note.

So, secretly and discreetly, you search the manor for clues, and try to interview the family members without making them suspicious. If you are caught too often poking your nose where it's not wanted or asking too many questions, you could find yourself sent packing home . . . or to your grave.

Well, I've been playing this game for hours beyond end, and the plot seems to become more intricate and complex the further I progress. Why did Julia give everyone, except her husband and son, a special gift before she died? What is beyond the well in the garden? What is the mystery behind the recent engravings in the cellar? Why is the motto missing from the coat of arms? What is Eva's real occupation? Why won't Leo allow me to enter Julia's locked bedroom? What is the significance of the strange but magical scrolls? And who is the mysterious woman in the photograph in the attic? These are just some of the many questions you'll find yourself asking in this fascinating story.

The game is totally mouse driven, in *Deja Vu* style, however, *Mortville Manor* wipes the floor ten times over with *Deja Vu* in all areas. Crisp colour graphics depict every location in the game, as well as every object. You select a verb from the menu (and a good selection there is too!) and then point to something on the screen. The screen will graphically update itself. You call open all doors, cup-

boards and drawers and then search them, manipulating any objects you find - and believe me, there are quite a few! (With many red herrings thrown in too!).

A small box in the corner of the screen lists all the characters in the room. Watch out for sudden entrances! You can start up a conversation with any of these characters. This is where the game really gets clever. Once you select the character, an animated picture of him/her will be displayed. Then you ask it a question from the selection on the screen (which updates as you uncover more clues), and the character will actually reply to you using the Amiga's fantastic speech capabilities!

Each character has his/her own individual voice, and speaks with a clear, authentic French accent! If you didn't quite catch what was said, then click in the mouse and it will be repeated. Not only that, but as the character talks, he/she has full facial expressions (frowning, smiling, winking etc). This really has to be seen to be believed. Of course, if you ask too many questions, the fact you are too curious is drummed into your head.

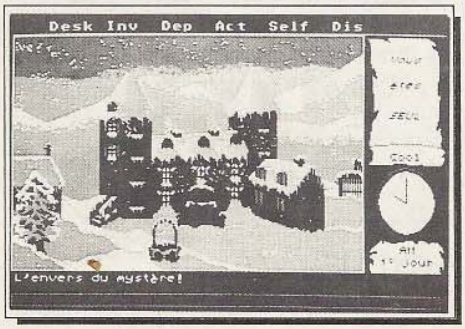
The game features fantastic sound effects, some digitised, some not, ranging from the great theme music (a guy in the background sings "Oooh . . . Mortville Manor", to the rhythm of the tune), to the chilling suspense music as you enter each room, through to the convincing digitised sound of footsteps! This and the French accents of the characters increase atmosphere by 100%.

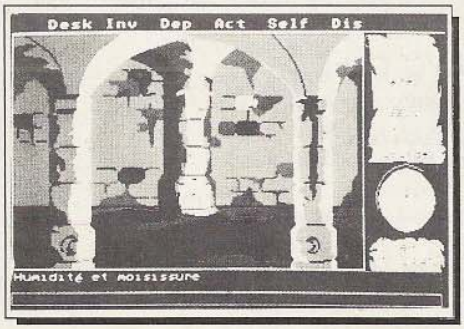
Although the graphics are not as elaborate as *The Pawn*, a fair amount of time has been spent on detail and animation. The vocabulary is extensive and the game totally playable. My only qualm is that the player tends to be killed off too easily, however an easy to use save/load routine has been added. There aren't a great number of locations, which makes it easy to explore and map. I haven't come across a maze yet, though the manual hinted of a labyrinth.

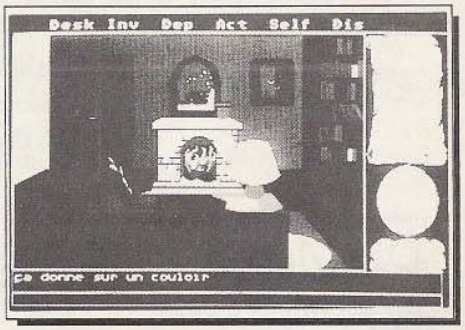
Slick presentation, good playability, pleasing graphics, unique characters, great atmosphere, good vocabulary and an absolutely compelling plot with a small touch of humour thrown in, to me, makes *Mortville Manor* the best adventure game to be released this year. Suitable for newcomers and veterans, this is very likely to become your favourite, as it has become mine. Go out and buy it now!

Verdict: Most definitely in the running for adventure game of the year.

Rating out of 100 - 100
Amiga version, RRP
$59.95 from Pactronics
(02) 407 0261







Review: Firezone

by PSS

Firezone, the latest release from PSS, is an interesting and challenging game of combat in the 21st century. There are nine preset scenarios to choose from, and a scenario editor program to enable you to design your own battles. The main weapons systems can include grav tanks, leviathans, and striders, among others, which simulate a new type of combat between European League or the Pacific Combine.

The viewing area is a hex scrolling map, which gives the game a kind of OGRE feel about it. However, there is a lot more doing in this simulation.

You can choose from a two-player head-to-head combat, or a loner can challenge a very smart computer opponent. Movement and combat are phased, and the game mechanics consist of pull-down menus and windows - making the game very user friendly. Winning is another matter - your tactical thinking will be tested as you try different strategies and options to beat up on your opponent.

The graphics are very clear and colourful, and very pleasant to the eye. The sound, however, sounds like it was taken out of your average shoot-em-up game. The game itself has that arcade-game sort of feel about it.

The packaging is excellent, as is the overall presentation of the game. The manual is well detailed and well laid out. It does a good job at setting the scene for this futuristic simulation by guiding the player step-by-step through the structure of the gameplay, with good use of examples and screen shots. Nice to see an easy to follow instruction manual that makes life easier.

Firezone is an exciting and colourful simulation which offers a fresh approach to the more conventional style of wargame. A good introductory game for newcomers, which still provides experienced veterans with a serious challenge.

Rating out of 100 - 85
Amiga version, reviewed by
Barry Bolitho &
Michael Spiteri

The Dungeon

by Kamikaze Andy

News from the world of role-playing

Microprose plans to release an Amiga version of its best-selling rpg *Pirates*. A sequel to *Pirates*, called *Samurai*, will soon be available for the Commodore 64.

Interplay, creators of the *Bard's Tale* series, will soon release the Amiga version of its C64 hit *Neuromancer*. The graphics are absolutely superb, while the digitized soundtrack is brilliant. In fact, the Amiga version of *Neuromancer* was featured on Beyond 2000 a few month back. For the C64, Interplay has promised *Meantime* - a futuristic RPG which will also use characters from the other Interplay hit - *Wasteland* (soon to be released for the Amiga, as well!)

Upcoming RPG's from Electronic Arts include *Project Firestart*, set in a futuristic high-tech world, and possibly *Bards Tale 4*. Will it ever end?

MS: Another important release that should be noted is *Wizardry 5*, produced by Sri-Tech and distributed by Questor. The press release claims that this new addition to the current popular series include new mazes, new abilities, new spells, new combat systems and new monster encounters. RRP is $79.95.

Troubled Adventurers Department (or..Problems, Problems & more Problems)

Boy! The problems have been flooding in during the months of March and April, so if you can help any of these demented sufferers, then please do so before they get pushed over the edge.

Firstly, veteran adventurer Alex Harvey has had the same problem troubling him for many months, and none of the help I give him seems to get him out of his mess. The game is Infocom's *Sorcerer*. Alex needs to know the exact command to open the trunk, and if he is entering the wrong colour combination (white, grey, black, red, grey), could someone tell him the correct one!! Alex has been stuck on this game for over a year now and has since solved *Bards Tale III* (within three weeks), so whatever he's doind wrong is very trivial!!

Patrick Wilson of Gladstone in Queensland is being driven around the bend by *Shadowgate*. Apparently the Warlock Lord beats him evewand the Staff of Ages? If not, where is it? Then into the world of *Arazok's Tomb*, how does Patrick get past the snake?

Another soul buster stuck in *Arazok's Tomb* is Tony Lunberg. His problems include trying to turn the power on in the city, getting past the force-fields, and thirdly - the good ol snake!!

Old cheapie *African Safari* is still proving a challenge to many adventurers. Raquel Scerri from Port Kembla in NSW is having a problem getting the snake off the paddle (snakes alive this month!) Then in the haunting game of *Drak*, when you get to the room with the plant and key in it, how do you get the key without the plant eating you?

Thermonuclearwargames is rearing its ugly head again and giving Craig Wright of Arnold West in Vic over the fence. Then, in the American adventure *Buckaroo Banzi*, using the radio, mixing fuel, climbing mountains, and opening house doors are all tasks Craig is having difficulty achieving.

The *Eureka* package is giving Chris Morley of Broken Hill, NSW many headaches. In the Roman section, the chariot race being won, what do you say to Nero? Then in Britain, how do you obtain the magic ring from the human body? Then to wartime Germany, how does Chris cross the landmine field to reach the bunker? Chris, I think the tune you are after is Jailhouse Rock.

A character called Severian thinks the Realm should create a clever contacts list. This suggestion has been mentioned before but with little feedback, so come on, what do you think? Meanwhile, Severian is stuck in *Space Quest II* with a certain cave monster, and in *Legend of the Sword* with a survival problem!

Smart Adventurers Dept (or help, help, and more help!)

This month's smart adventurer is Linda Ulett, who has sent in the following two tips...

For: Paul King

Game: ?

Help: To stop the ship sinking you have to repair ship before you go to sea. First get the tables, examine them, then Break Tables, then Repair Ship.

For: Nick Van Heeswyk

Game: ?

Help: To climb the tree, throw the rope. The map is in the tree and the cloak will be useful.

Unfortunately, because I've run out of space, Super Hints won't reappear until next month. In the meantime, suck on these juicy *Bards Tale III* tips courtesy of Alex Harvey . . .

In Arboria use a wineskin to take the water of life. You will need it to water the acorn. In Gelidia, to defeat the wall, curtain and creature, cast spells in order corresponding to the lines of the given poem. In Lucencia you may find the dragon's blood has growing powers. In Tenebrosia, use some molten tar to burn down a very obtrusive tree. Use the door and the lock in the middle of nowhere. Also, to complete the game, you must have a rogue in your party, 3 mages and a bard also come in handy.

Until next month - lucky adventuring!

Guide to contributors

EVERY MONTH WE receive dozens of submissions from would be writers. For these we are most grateful. If you have considered writing for the *Australian Amiga and Commodore Review*, here's a few guidelines. The majority of contributions are accepted, however as we have a larger number to choose from these days, a few more stringent guidelines need to be met.

Style: Easy to read, entertaining and informative. We aim to be an enjoyable easy to read publication - with a smattering of technical articles for those so inclined. We are most interested in tutorials, "how to" type articles, and general hints and tips. Programs are also sought after for our disk magazines, Suite 64 and Amiga Live!

Format: Don't include any formatting such as printer controls, centred headings, print styles etc. Put a space after commas or full stops. Do not indent paragraphs. Numbers under 10 should be typed. We prefer contributions on disk - Commodore 64/128, Amiga, MS-DOS and even Macintosh. Don't double space. Just a straight ASCII text file is all we require. We also accept contributions via modem once you become a regular contributor. Baud rates of 300, 1200, 1200/75 and 2400 are supported.

What to include: A brief letter, if it's your first effort. Your phone number - this is the most important thing! And put your name at the top of the actual article, not just on the letter.

What you get: Fame and a little fortune. Writing is a lot of fun. You'll get payment of $50 per 1000 words - paid about one or two months after publication and a free subscription to the magazine after your third article. We take receipt of the article as permission to publish - you may not always be contacted before we use your article.

Where to send contributions: Post articles directly to *The Australian Commodore and Amiga Review*, 23 Bonnefin Rd, Hunters Hill. Or call (02) 817-0011 to arrange modem transfers.

Don't send us your original - we cannot guarantee return, and it may become damaged in the post. Send 5 1/4 inch disks in an Australia Post cardboard Post Pak especially designed for carrying disks. Do *not* use padded post bags - these have a tendency to make the postman want to bend them in half. Amiga disks can just be sent normal mail.

That's it! For a more detailed version of the above, call our office and ask for the complete writers guide. ■

Advertisers' Index

Advent Solutions	9	M.A.S.T.	47
Amiga Annual	18	Maxwell	43
Amiga - Live	60	Megadisc	53
Artscape	13	MicroAccessories of SA	55
Commodore Annual	56	MicroComputer Spot	36,37,38,39
Cockroach	67	Multicoin Amusements	5
Commodore	11,15,57,IBC	Pactronics	IFC,3,7,35
Computer Discounts (Diskworks)	33	Parcom	55
Computermart	4	Photographs	55
Computermate	9,13,51	Prime Artifax	59
Copygraph	67	Questor competition	61
Disk Magazines (All) Suite	64 62,63	Roseneath	67
Dolphin	41	Subscriptions	6
E.C.P	25	Viatel (Telecom)	30/31
Energy Control	32	Westend	21
HPD	45	White's Computers	9
Interlink Software	27	Wilcom	67
Island by Mail	49	YPA Holdings	1,OBC
Lazarus Ribbons	67		

Nearly One Million Amiga computers have been sold worldwide.

As an exciting component in a child's education, Amiga is a sound investment.

Why not give your children the educational advantage?

In fact, the Amiga 500 and the Amiga 2000 are two of the most advanced educational computers available.

Their features include the ability to expand as far as a child's willingness to learn.

A huge software base that's constantly growing to keep pace with the latest in technology and knowledge.

Plus a whole range of other uses including graphics, animation and synthesized sound.

If you're clever enough to buy an Amiga computer, imagine the boost it will give your child's education.

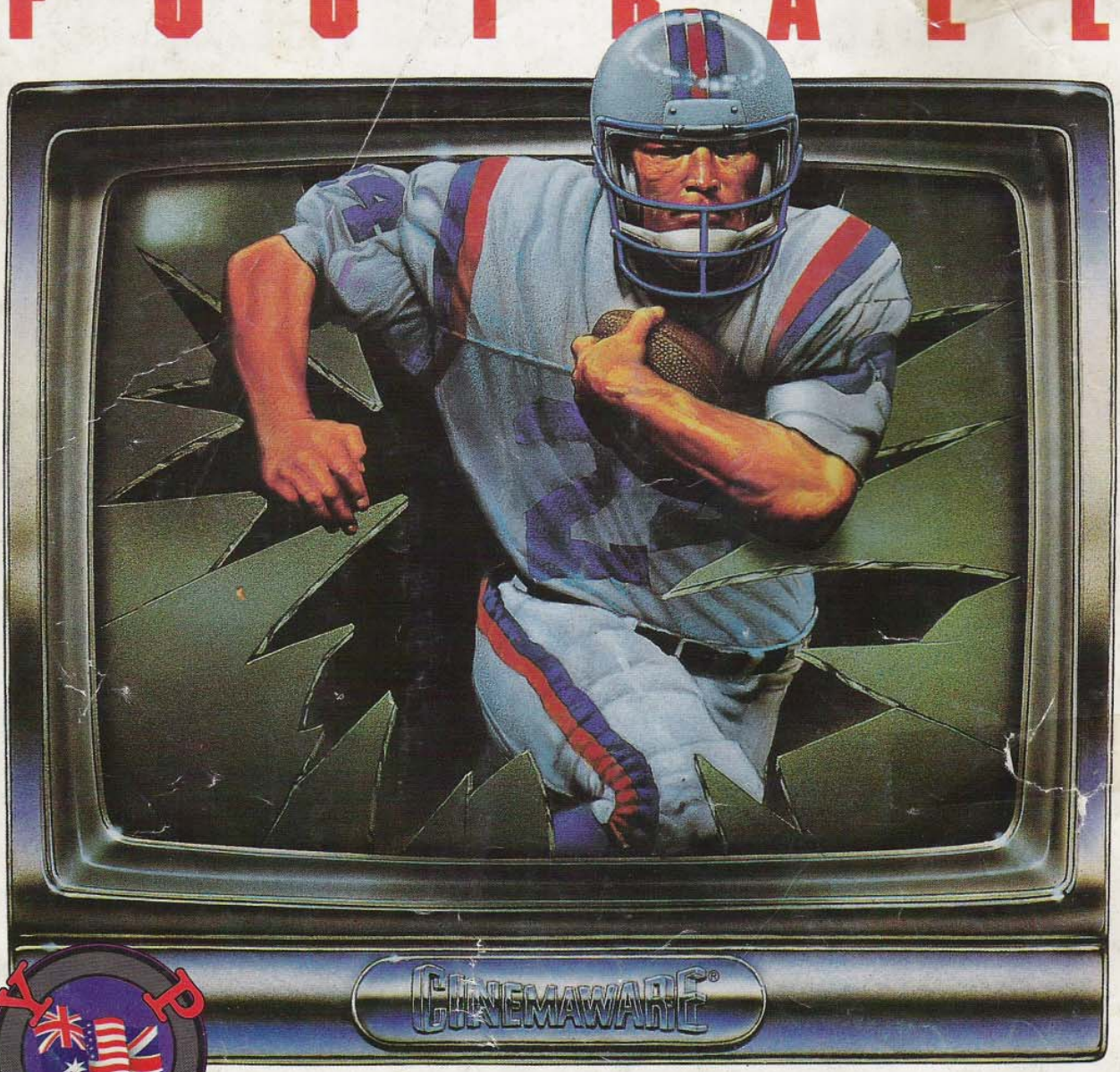
commodore

SMARTER.

JSA COM 0314

TV SPORTS™

FOOTBALL



CINEMAWARE®

YPA Holdings, 5-6 Gladstone Rd, Castle Hill,
NSW 2154. Phone:(02) 8992277 Fax (02) 899 2348

Available in the following formats: Amiga